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FACULTY OF EDUCATION
The University of Alberta

THE EDITOR'S PAGE

Put Up Time

A key recommendation in *Canadian Research on Education: A State of the Art Review* sponsored by the Canadian Society for the Study of Education in 1981 was that the Social Sciences and Humanities Research Council organize the establishment within education of priority areas for research of national interest which would serve as the focus for programmatic research. The editors of the report, John Andrews and Todd Rogers, argued that such focusing of research will lead to increased productivity and quality, aid in the establishment of a research tradition, and result in an improved capacity for research in education.

SSHRC has now responded favorably to this recommendation by including research related to *education and work in a changing society* in its strategic grants program. Within this broad theme, projects may deal with skill development, work habits and attitudes; the goals and roles of those affected and involved; institutional and systemic responsiveness to change; and/or the influence of an increasingly competitive international environment. Thus the interests of most academics can likely be accommodated.

Three kinds of grants are now available for the first time: (a) seed money grants of up to \$5,000 for the development of proposals; (b) research workshop grants of up to \$15,000 for enhancing knowledge and skill in problem definition, design, and methodology; and (c) strategic research grants of up to \$10,000 for one year, or \$250,000 over three years, for relevant projects, including pilot or feasibility studies. For 1987 awards, the deadline for receipt of application is April 1 with results to be announced in September 1987.

The good news is that these grants are available. The bad news is that they put at risk the reputation of the scholarly community in Canadian education. For the number of proposals submitted will attest to the authenticity of our interest in the advancement of knowledge; and the nature of the proposals will demonstrate the quality of our intellectual inquiry. Our collective response will be a public test of the sincerity and strength of our commitment to the view that the functions of education in our society are so vital to the well-being of our country as to require that research directed toward its improvement be undertaken.

It is now *put up time*.

We must *put up*. We must *put up* or be branded as academic charlatans. And we must *put up* or contribute to the triumph of ignorance through the continued application of yesterday's solutions to tomorrow's problems.

We must *put up* or have only ourselves to blame.

WHW

EUGENE W. RATSOY

University of Alberta

JAMES C. SARROS

Victorian Ministry of Education, Australia

and

NICHOLAS AIDOO-TAYLOR

Technical Teachers' College, Kurnase, Ghana

Organizational Stress and Coping: A Model and Empirical Check

A conceptual model tracing the relationships among organizational stress sources, stress effects, and coping strategies used by personnel is presented, followed by a study of organizational stress among district-based administrative and supervisory personnel. The study revealed that work load and interpersonal relationships were major sources of stress. The frequency of the stresses encountered decreased as organizational level of responsibility increased, although the intensity of stress for each stress source increased. The findings suggest that experiences of stress are role specific. That is, district-based administrators experienced more role conflict and role ambiguity than other educational personnel but registered the lowest levels of stress for other work stressors. Major coping strategies used by these administrators were support from immediate family and support from work colleagues.

Stress and how to cope with it in organizations are frequent topics of discourse, research, and writing both within the fields of education and in organizations generally. However, Schuler (1984) asserted that "there is still a great deal not known about stress or coping with stress in organizations" (p. 1). Even less is known about the causes and consequences of work stress among educational administrators. Further, studies are inconclusive in their findings (e.g., Farkas, 1984; Jankovic, 1983; Koff, Laffey, Olson, & Cichon, 1980; Meléndez & de Guzmán, 1983; Swent &

Dr. Ratsoy, a professor of educational administration with a specialization in organization studies, is presently directing a province-wide research project on the teacher internship in Alberta.

Dr. Sarros, a recent Ph.D. graduate of the University of Alberta, has research interests in educator stress and burnout, and organization theory and behavior.

Dr. Aidoo-Taylor recently completed doctoral studies at the University of Alberta where his research focused on staff development.

Gmelch, 1977; Welch, Medeiros, & Tate, 1982). This report is a response to the continuing concern about the sources and effects of stress and coping with stress in an educational context.

Purpose

The purpose of the article is fourfold:

1. To present a conceptual model which would be useful in tracing the relationships among the multitude of sources of stress, effects of stress, and coping strategies in an educational organization;
2. To report the findings of a study of organizational stress among district-based educational administrative and supervisory personnel in a large Western Canadian urban school district;
3. To identify the specific effects of stress on the individual and the organization;
4. To outline the coping strategies used by each subgroup of district-based personnel.

Conceptual Design

The study was delimited to an examination of distress, defined by Selye (1974, p. 5) as a negative form of stress which arises from unpleasant experiences. This form of stress, unlike the positive eustress, is far from therapeutic and is almost always destructive. Because of its deleterious effects on individuals and ultimately on the organizations in which these individuals work, it was felt that a more complete conceptualization than was heretofore available of the stress experienced by educational personnel—and others—was needed. Such a conceptualization would reveal the relationships that exist among a variety of variables associated with stress in an organizational context and should contribute to an understanding of stress in organizations. This should help identify information needed for decisions aimed at enhancing the job design and work roles of educators. In addition, it was felt that the conceptualization would assist the researcher and practitioner to address the suggestion by Organ (1978) that “we need to know much more about the organizational sources of stress, the conditions under which stress is more or less tolerable, and individual differences that moderate or mediate the effects of stress” (p. 305).

Stress has been generally conceptualized as an individual psychological, physiological, and behavioral response to a situation that is perceived as presenting a demand which threatens to exceed the individual's capacities for meeting that demand (e.g., Baum, Singer, & Baum, 1981; Hiebert, 1984; McGrath, 1976; McLean, 1979). This transactional definition of stress, according to Cox and Mackay (1981, p. 101), focuses on “the active and adaptive nature” of the transaction between the individual and the organization. From this perspective, transactional models of stress serve as appropriate models of organizational stress. The model of stress developed for the purposes of this article is a composite of the transactional stress models designed by Cooper and Marshall (1976, p. 11), Ivancevich and Matteson (1980, p. 44), and Kyriacou and Sutcliffe (1978, p. 3).

As the model of organizational stress presented in Figure 1 reveals, within-organizational sources of stress or stressors may be physical, individual, group, or organization-wide in origin. In this study, eight factors of work stress identified in a factor analysis of 50 stress items and two dimensions of role stress—role ambiguity and role conflict—were found to be the major intraorganizational stressors. Among

these intraorganizational stressors, the physical stressors were identified by an inadequate physical resources factor and a noise factor. Individual stressors were identified by the factors of lack of respect (by others, for one's professional field) and job uncertainty. The group stressors were of two sorts: an unsatisfactory relationships with colleagues factor and an unsatisfactory relationships with superordinates factor. Organization-based stressors included the role stress items making up the role conflict and role ambiguity scales, as well as the stress factors of work load and program constraints.

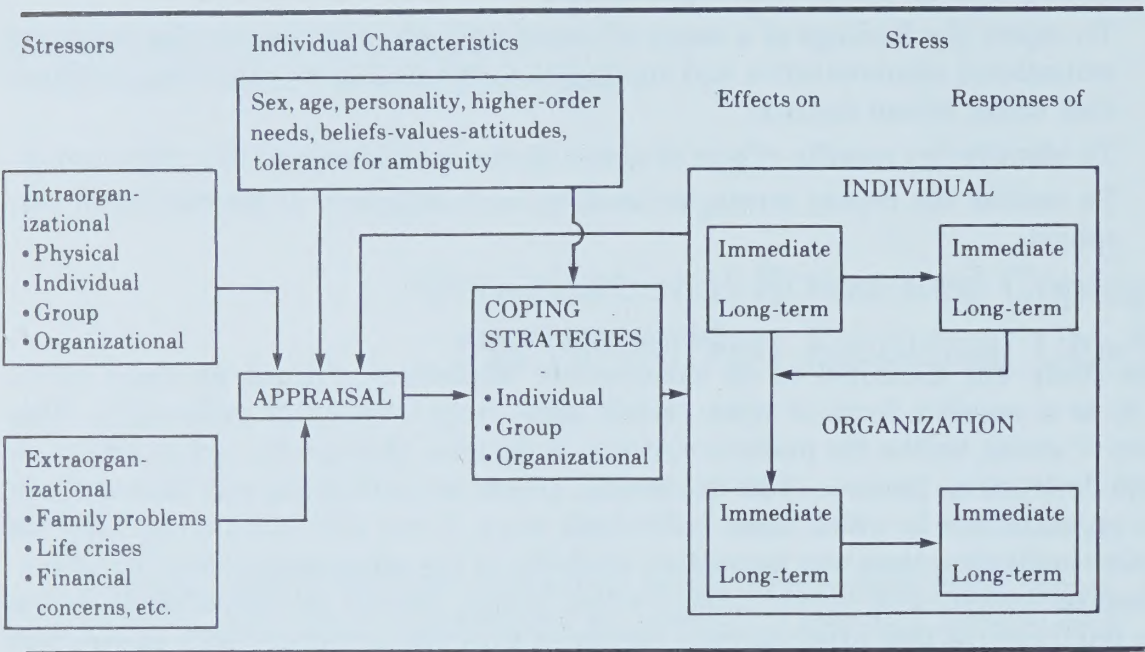


Figure 1: Model of organizational stress.

This organizational model of stress sources and stress effects assumes that stress is the result of the individual's appraisal of a potentially stressful work situation. Coyne and Lazarus (1980) defined appraisal as "the person's continually reevaluated judgments about demands and constraints in ongoing transactions with the environment and his or her resources and options for managing them" (p. 150). Appraisal is influenced by individual characteristics such as sex, age, the psychological Type A and Type B behavior syndromes, and personal values and beliefs.

Whenever organizational stressors are perceived as threatening to personal well-being, efforts are made to employ coping strategies. Baum, Singer, and Baum (1981) asserted that "the perception of danger motivates a search for coping responses that will reduce this threat" (pp. 9-10). The use of a coping strategy may moderate but not necessarily negate experiences of work stress. Stress may have both immediate and long-term consequences for the individual. The extent to which immediate stress responses to coping have long-term consequences may be a function of individual coping strategies employed and the organizational support provided (e.g., Shinn, 1982, p. 79). Some immediate effects of stress for the individual are increased blood pressure and rapid heart rate, which cause momentary distress (e.g., Selye, 1974, pp. 25-30). If stress persists, long-term consequences such as

job dissatisfaction and burnout may occur (e.g., Blase, 1986; Cherniss, 1980a, 1980b; Maslach, 1976, 1977; Veninga & Spradley, 1981).

Individual responses to work stress have been implicated in the etiology of work performance decrement, poor mental health, and psychosomatic diseases (e.g., Davidson & Cooper, 1981; Frese, 1985; Ivancevich, Matteson, & Preston, 1982; Kyriacou & Pratt, 1985). Individual stress responses have specific effects on organizations such as poor quality service, poor staff relationships, absenteeism, and fluctuations in work productivity. Some long-term organizational effects include negative competition among subsystems, poor communication networks, isolated administrative decisions, and deteriorating service (e.g., Carroll & White, 1982, p. 43). Long-term organizational consequences of these effects are employee turnover and transfer, formalization of rules and regulations, and new personnel policies intended to curtail further employee disenchantment and stress. Cherniss (1980b) asserted that burnout as a consequence of work stress "contributes to a decline of staff job satisfaction . . . [and] can affect turnover, absenteeism, and interpersonal conflict" (p. 32). The feedback loops in Figure 1 from individual and organizational stress responses indicate that the situation remains stressful, escalates in intensity and frequency, or is moderated depending on the quality and success of reappraisal by the individual. The experiences of work stress by district-based educational administrators reported in this study are described within the context of the conceptual model of organizational stress outlined above.

Sample

The primary focus of the empirical component of this paper is on the 134 district-based administrative and supervisory personnel who participated in a system-wide survey of 2,829 school-based and district-based educational personnel in a large Western Canadian urban school district undertaken by Ratsoy and Friesen (1985). Other groups involved in the survey were nonadministrative school-based personnel ($N=2,478$), and principals and assistant principals ($N=217$). These responses represented a 67% return from all such personnel in the school district and a return of 76% from the district-based personnel.

The 134 district-based administrators and supervisors included 43 specialists such as speech clinicians and psychologists, 57 subject consultants, 17 supervisors responsible for coordinating the services of consultants, six directors responsible for coordinating the services of specialists and supervisors, and 11 assistant and associate superintendents in charge of instructional services and school support services.

Instrumentation

The questionnaire used to collect the data was designed especially for the study and contained seven sections, (a) respondent demographic information including global occupational stress and personal life stress items, (b) 50 items on frequency and intensity of work-related stresses, completed by all educational personnel in the district, (c) 25 additional items for school-based staff, (d) 18 items relevant to principals and assistant principals, (e) role ambiguity and role conflict scales (Rizzo, House, & Lirtzman, 1970), (f) a work-related burnout scale (Maslach & Jackson, 1981a, 1981b), and (g) open-ended and semiopen-ended questions on the nature and effects of work-related stresses affecting the respondent, on the long-term consequences of the work-related stresses experienced, on the support services available to the respondent, and on the degree of satisfaction with the district's stress coping procedures and systems.

As indicated earlier, this paper reports findings for the eight stress factors produced by the factor analysis of the 50 stress items completed by all educational personnel in the system-wide survey of the district. The eight stress factors identified were: work load, unsatisfactory relationships with superordinates, unsatisfactory relationships with colleagues, lack of respect, job uncertainty, program constraints, inadequate physical resources, and noise. Also included are the findings for the two role stress variables of role conflict and role ambiguity.

Respondents were asked to indicate how frequently they experienced work-related stressors, and how stressful they were for them. Frequency of stress was recorded on a 6-point scale ranging from "Never" to "Very Frequently." Intensity of stress was recorded on a 6-point scale ranging from "Not Stressful" to "Extremely Stressful."

Analyses

Data transformation performed on the fixed-response items included frequency and percentage frequency distributions of the responses to the stress items, factor analysis of the items using varimax rotation, and analyses of variance. Open-ended responses were subject to content analysis. The open-ended responses provided by the district-based personnel added further insights into sources and consequences of work-related stress. This procedure was in keeping with the views of Carnoy (1979) who recommended content analysis "when source material is used to complement some other kind of data during an enquiry into attitudes" (p. 64).

Study Findings

The results of the analyses of variance for the three major subgroups of respondents who participated in the system-wide survey are presented in Table 1. For each stress factor, the district-based personnel were on the average experiencing less stress than nonadministrative and administrative school-based personnel. For five of the eight stress factors the mean stress score was significantly lower (.05 level) than that of at least one of the other groups. In contrast, district-based administrators recorded highest means for role ambiguity and role conflict, and in both cases their mean was significantly higher than that of the school-based non-administrative personnel.

Nonadministrative school-based personnel (primarily teachers, but also including department heads, librarians, and counselors) recorded significantly higher levels of stress than the district-based personnel (assistant and associate superintendents, directors, supervisors, subject consultants, speech clinicians, and psychologists) for five of the eight stress factors. Work load was the key stressor for all three groups, with no significant differences among them on this variable. This finding is consistent with Blase and Pajak's research reported elsewhere in this journal. Their study of 80 secondary school teachers found that excessive work demands were major contributors to stress and had deleterious effects on teachers' personal lives. The finding that nonadministrative school-based members of staff were experiencing significantly more stress than administrative personnel supports research which indicates increasing work-related pressures and tensions among teachers are related to their experiencing job dissatisfaction, stress, and burnout (e.g., Anderson & Iwanicki, 1984; Blase, 1982; Cedoline, 1982; Chapman, 1983; Friesen & Williams, 1985; Kalker, 1984; Kyriacou & Pratt, 1985; Litt & Turk, 1985; Schwab & Iwanicki, 1982b).

TABLE 1
One-Way Analyses of Variance for Stress Scores of
District-Based and School-Based Personnel

Stress Variable	N=	Computed Means for Each Item*			Overall Mean (2829)	Significantly Different Groups
		A (134)	B (217)	C (2478)		
1. Work load		3.1 ^b	3.1	3.2 ^a	3.2	None
2. Unsatisfactory relationships with superordinates		2.6 ^b	2.7	2.8 ^a	2.8	None
3. Unsatisfactory relationships with colleagues		2.5 ^b	2.7 ^a	2.5	2.6	None
4. Lack of respect		2.4 ^b	2.9	2.9 ^a	2.9	A-B, A-C
5. Job uncertainty		2.2 ^b	2.6	2.8 ^a	2.7	A-B, A-C, B-C
6. Program constraints		2.4 ^b	3.1 ^a	2.9	2.9	A-B, A-C
7. Inadequate physical resources		2.1 ^b	2.3	2.6 ^a	2.5	A-C, B-C
8. Noise		2.4 ^b	2.7	2.9 ^a	2.8	A-C, B-C
9. Role ambiguity**		2.8 ^a	2.6 ^b	2.6	2.6	A-C
10. Role conflict**		3.4 ^a	2.6 ^b	2.9	3.0	A-C, B-C

A=District-based administrators; B=Principals and assistant principals; C=Nonadministrative school-based personnel.

*Original response categories for degree of stress were the following: 1=Not stressful; 2=Mildly stressful; 3=Moderately stressful; 4=Considerably stressful; 5=Very Stressful; 6=Extremely stressful.

**Original response categories for role stress ranged from 1=Definitely NOT TRUE of my job to 7=Extremely TRUE of my job.

^aIndicates highest stress level for this factor or role stress variable.

^bIndicates lowest stress level for this factor or role stress variable.

Principals and assistant principals reported the highest level of stress on the program constraints variable for which their scores, along with those of their school-based nonadministrative colleagues, were statistically higher than those of the district-based personnel. Feeling powerless to alter prescribed programs may have contributed to feelings of stress among these school-based personnel. Principals and assistant principals had significantly higher stress scores for inadequate physical resources than the other two groups. In this regard, Welch et al. (1982) mention that principals are experiencing stress and burnout in record numbers because they are “faced with the problem of doing more with less . . . individual autonomy is declining” (p. 44). The findings of the present study tend to support the last assertion; however, the claim that principals are experiencing burnout in “record numbers” seems too strong. For instance, the relatively low

levels of role stress—both conflict and ambiguity—recorded by principals and assistant principals challenge established theory and research which suggest the boundary-spanning role of administrators encourages feelings of role conflict and role ambiguity (e.g., Caldwell & Doremus, 1978; French & Caplan, 1973; Gmelch, 1977; Miles, 1975, 1976a, 1976b; Miles & Perreault, 1976). Instead, the findings from the present study support the claim of Gorton (1982) that “most high school principals are coping rather well with the difficulties of their job and are not experiencing a high level of stress” (p. 199).

Generally, the findings of the present study suggest that levels of organizational stress decrease as organizational level of responsibility increases. For instance, district-based administrators recorded the lowest mean scores for each of the eight stress factors. In contrast, their higher levels of role stress indicate that experiencing stress may be role specific. The “executive” role and associated activities of district-based personnel may leave them susceptible to differing expectations and at times to insufficient information, encouraging feelings of role conflict and ambiguity.

Within Group Comparisons

The results of analyses of variance for the five subgroups of district-based personnel are presented in Table 2. As has already been indicated, the major stressor for district-based personnel and for school-based personnel was work load, registering an overall mean of 3.1. The factor with the lowest mean for the district-based personnel was inadequate physical resources.

When subgroups were examined individually, each of the five subgroups had at least one mean stress score higher than the means for the other groups. For example, the assistant and associate superintendents (E) exhibited higher levels of stress for work load, lack of respect, and role ambiguity compared with the other subgroups; these senior level administrators also registered the lowest levels of stress on four factors; however, none of these means scores was significantly different from the means for the other four subgroups.

The only difference in means to reach statistical significance was between specialists and consultants for the program constraints factor. Specialists exhibited significantly more stress than consultants on this stress factor.

Overall, it is safe to generalize that differences among the five subgroups of district-based personnel, in terms of the levels of stress experienced, were minimal.

Open-Ended Responses

As indicated in Table 3, analysis of the open-ended responses revealed that work load was identified as the major stressor by 47% of respondents. Items identified as constituting work load included (a) an inadequate amount of time to plan and accomplish tasks satisfactorily, (b) too many meetings, (c) unrealistic deadlines, (d) too much paperwork, and (e) unreasonable expectations. Unsatisfactory relationships with superordinates was mentioned by 22% of respondents. These district-based administrative personnel referred to their lack of participation in decision making and the role of feedback on performance as aspects of these relationships.

Both role conflict and role ambiguity were identified by 10% or more of district-based personnel as sources of stress. Examples of the role-related stress sources included (a) playing the middleman between teachers and parents,

TABLE 2
One-Way Analyses of Variance for Stress Scores of District-Based Personnel

Stress Variable	N=	Computed Means*					Overall Mean (134)	Significantly Different Groups
		A (43)	B (57)	C (17)	D (6)	E (11)		
1. Work load		3.1	3.1	3.0 ^b	3.1	3.5 ^a	3.1	None
2. Unsatisfactory relationships with superordinates		2.6 ^b	2.6	2.9 ^a	2.8	2.6	2.6	None
3. Unsatisfactory relationships with colleagues		2.5	2.6	2.9 ^a	2.2	2.1 ^b	2.5	None
4. Lack of respect		2.2	2.5	2.4	2.0 ^b	2.8 ^a	2.4	None
5. Job uncertainty		2.2	2.3 ^a	1.9	2.0	1.8 ^b	2.2	None
6. Program constraints		2.8 ^a	2.2	2.3	2.2 ^b	2.3	2.4	A-B
7. Inadequate physical resources		2.2	2.1	1.9	2.5 ^a	1.7 ^b	2.1	None
8. Noise		2.6 ^a	2.2	2.6	12.5	1.8 ^b	2.4	None
9. Role ambiguity**		2.7	3.0	2.5 ^b	2.6	3.1 ^a	2.8	None
10. Role conflict**		3.4	3.4	3.2 ^b	3.8 ^a	3.5	3.4	None

A = Specialists; B = Consultants; C = Supervisors; D = Directors; E = Assistant/Associate Superintendents.

*Original response categories for degree of stress were the following: 1 = Not stressful; 2 = Mildly stressful; 3 = Moderately stressful; 4 = Considerably stressful; 5 = Very stressful; 6 = Extremely stressful.

**Original response categories for role stress ranged from 1 = Definitely NOT TRUE of my job to 7 = Extremely TRUE of my job.

^aIndicates highest stress level for this factor or role stress variable.

^bIndicates lowest stress level for this factor or role stress variable.

(b) dealing with novel situations, (c) dealing with conflicting responsibilities and expectations, (d) lack of long-range goals and expectations, and (e) lack of clarity about span of control.

When subgroups were examined individually, and consistent with the quantitative data, work load was the major stressor for all subgroups. If frequency of response is any indication of severity of the stressor, assistant and associate superintendents (E) appeared more concerned with work load (72%) than any other subgroup. This finding complements the findings for the fixed-item responses. Also consistent with the data presented in Table 2, supervisors identified unsatisfactory relationships with superordinates as a major source of stress. In comparison, while directors recorded the second highest level of stress for this factor, they did not allude to it in their open-ended responses.

Role ambiguity featured as a stressor for all subgroups, although role conflict was identified only by specialists, consultants, and supervisors. Szilagyi (1977,

TABLE 3
Stress Sources Identified in the Qualitative Analysis

Stress Variable	N=(% =)	A- 43(32)	B 57(43)	C 17(12)	D 6(5)	E 11(8)	Total 134(100)
1. Work load		20(46)	26(45)	6(35)	3(50)	8(72)	63(47)
2. Unsatisfactory relationships with superordinates		7(16)	15(26)	5(29)	—	2(18)	29(22)
3. Unsatisfactory relationships with colleagues		—	2(3)	1(6)	—	—	3(2)
4. Lack of respect		1(2)	—	—	—	—	1(1)
5. Job uncertainty		5(11)	5(8)	—	—	—	10(7)
6. Program constraints		4(9)	4(7)	—	—	—	8(6)
7. Inadequate physical resources		7(16)	2(3)	—	2(33)	—	11(8)
8. Noise		—	—	—	—	—	—
9. Role ambiguity		5(11)	4(7)	1(6)	1(16)	3(27)	14(10)
10. Role conflict		4(9)	8(14)	5(29)	—	—	17(13)

A=Specialists; B=Consultants; C=Supervisors; D=Directors; E=Assistant/Associate Superintendents.

p. 384) asserted that role conflict occurs at lower organizational levels where employees are incapable of changing rules, procedures, and resources in an attempt to mitigate role conflict. This sense of powerlessness may explain the presence of role conflict for these administrators. In contrast, even though directors recorded the highest mean for role conflict in the fixed-response section of the questionnaire (Table 2), this was not mentioned as a problem area in their open-ended responses.

Consequences of Work Stress

Respondents in the study were invited in open-ended items to indicate the immediate effects of work stress and the long-term consequences of this stress. Some immediate effects included (a) frustration, anger, and disappointment, (b) fatigue and health problems, (c) job dissatisfaction, (d) inefficient work habits, and (e) little peer interaction. Specific comments made included the following: “jumping from one crisis to another,” “not as productive as I can be,” and “inefficient use of time, procrastination, and poor quality of service.”

The reported long-term consequences of stress included health problems, failure to achieve organizational and personal goals, and the loss of collegiality. Specialists and consultants appeared more concerned with health-related problems, whereas consultants, directors, and the assistant and associate superintendents seemed more concerned with lack of accomplishment of professional goals, and a deterioration in peer contact and family life. The specific comments made included: “loss of mission or direction,” “cynicism and mistrust,” “losing touch with former friends,” and “poor mental and physical health.” Many of these comments are representative of symptoms of burnout as identified by Welch et al., (1982), who mentioned the loss of willingness to relate to others, the sense of social isolation, a “tendency toward self-blame . . . [and] feelings of worthlessness” (p. 52). Generally, major long-term consequences of stress were reported to be chronic health problems, job dissatisfaction, frustration, and loss of collegiality.

Stress Coping Strategies

Respondents were provided with a list of common sources of support for coping with stress and were asked to indicate which of these they used when experiencing job-related stress. On average, respondents selected three sources of support. These major sources of support and the responses for the five subgroups of district-based personnel are presented in Table 4.

As indicated in the table, the immediate family and colleagues at work were the major sources of support in coping with work stress mentioned by 72% and 70% respectively of these district-based personnel. Two other strategies used were help from friends (49% of respondents) and recreational activities such as playing golf, fishing, or reading (48%). Seeking help from superordinates and one's church were less frequently mentioned as stress-coping strategies.

When subgroups were examined individually, specialists (A), directors (D), and associate and assistant superintendents (E) reported asking for help from work colleagues as their major coping strategy, followed by help from the immediate family, engaging in extraorganizational activities, and help from friends. Supervisors (C) and consultants (B) used family support as a major coping strategy, followed by help from colleagues at work. Help from friends and extraorganizational activities were next in frequency of mention by consultants, whereas activities and superordinate assistance were the next ones used by the supervisors. A smaller percentage of specialists, consultants, and supervisors turned to superordinates for help in handling work stress than did directors and the assistant and associate superintendents.

When respondents were requested to indicate their satisfaction with district-run programs used to facilitate coping with job stress, 28% of respondents reported they were unaware of any stress-coping programs in the district. A further 35% indicated satisfaction with the programs, and 37% indicated dissatisfaction with the district's stress-coping programs. Primarily, specialists and consultants were the ones most likely to be unaware of the district's stress-coping facilities; no supervisors, directors, or assistant and associate superintendents indicated a lack of awareness. These last three subgroups also were more satisfied with the stress-coping programs than were specialists and consultants. It is noteworthy that personnel in the last two categories mentioned, although district-based, worked primarily at or from schools in the system, whereas the remainder were located at the district's central office.

Discussion

Because this study was a system-wide survey of district-based educational administrators, the findings technically apply only to those respondents and to their jurisdiction. However, to the extent that administrators in other school districts have work situations comparable to those of the respondents, some generalizability of results may be warranted if the appropriate caution is exercised.

The present study investigated sources, conditions, and consequences of stress among educational administrators. A conceptual model of organizational stress illustrated the relationships among research variables. This model was derived from research which suggests that an individual's perception of the situation and its capacity to become threatening or challenging, harmful or benign determines the level of experienced stress (e.g., Anderson, 1985; Coyne & Lazarus, 1980; McGrath, 1976).

TABLE 4
Sources of Support for Coping With Work Stress

Sources of Support	N= (% =)	A	B	C	D	E	
		43(22)	57(43)	17(12)	6(5)	11(8)	
1. Immediate family		28(65)	42(74)	14(82)	5(83)	7(64)	96(72)
2. Friends		21(49)	32(56)	3(18)	4(66)	6(55)	66(49)
3. Church		13(30)	6(11)	1(6)	—	3(27)	23(17)
4. Colleagues at work		33(77)	37(65)	10(59)	5(83)	9(82)	94(70)
5. Activities (e.g., golf, TV)		29(67)	22(39)	6(35)	4(66)	4(36)	65(48)
6. Superordinates		6(14)	13(23)	4(24)	3(50)	5(45)	31(23)
7. Other		3(7)	2(4)	—	—	—	5(4)
8. No support available		1(2)	2(4)	—	—	—	3(2)
9. No help needed		2(5)	1(2)	1(6)	—	—	4(3)

A=Specialists; B=Consultants; C=Supervisors; D=Directors; E= Assistant/Associate Superintendents.

The findings of this study indicate that all subgroups of district-based educational administrators perceived work load as the most stressful aspect of their jobs. Personnel higher on the district’s organizational chart (assistant and associate superintendents) recorded a somewhat higher level of stress associated with work load than did the others (specialists, consultants, supervisors, and directors). Other major stress sources were unsatisfactory relationships with superordinates at work, role ambiguity, and role conflict. Work load and poor interpersonal relationships have been identified as major sources of stress for educators (e.g., Blase, 1982, 1986; Bloch, 1977; Caldwell & Doremus, 1978; Crowson & Porter-Gehrie, 1980; Farber, 1984a, 1984b; Griffiths, 1977; Koff et al., 1980; Kottkamp & Travlos, 1986; McGuire, 1979; Milstein, Golaszewski, & Duquette, 1984; Warner, 1980). Nebgen (1978) stated that in the school context, “unanimity seldom exists among teachers, administrators, parents, and students” (p. 1). Welch, Medeiros, and Tate (1982) maintained that an educational administrator’s interactions with people are almost always negative because of difficult personnel problems, disputes between parents and teachers, and discipline problems. For this reason, these administrators are condemned “to at least partial failure all of the time” (p. 48).

Research findings indicating that role ambiguity is more apparent at higher levels of organizational responsibility (e.g., Abdel-Halim, 1978, 1981; Mattingly, 1977; Miles, 1976a; Schuler, 1980; Szilagyi, 1977) are only in a very modest way borne out by this study. The results of the present research suggest that experiences of stress may be role specific. For instance, directors had the highest mean stress score for role conflict, and assistant and associate superintendents recorded the highest mean for role ambiguity, possibly as functions of the specific roles they occupied. However, no statistically significant differences were recorded for mean role stress scores.

Of some interest is the finding that district-based administrators reported higher levels of role stress and lower levels of stress in response to specific work factors compared with other educational personnel (see Table 1). These findings are consistent with research which indicates that experiences of stress are role specific (e.g., Farkas, 1984; Gorton, 1982; Koff et al., 1980; Ratsoy & Friesen, 1985). That is, teachers and principals may experience more work stress because of their

daily involvement with incessant and often unpredictable demands. In contrast, district-based administrators may have the necessary resources and autonomy needed to mitigate their sources of work stress.

Both the quantitative and qualitative data collected in the study revealed that directors, consultants, and specialists, more frequently than the others, reported inadequate resources as a source of work stress. Although none of the differences among groups was statistically significant, it may be worthy of note that supervisors had the highest mean score for stress related to interactions with superordinates and with colleagues, while registering the lowest mean scores among the five groups for role conflict and ambiguity. Apparently, the responsibility for coordinating the consultancy service in the district resulted in some stressful encounters with personnel. This issue requires further investigation to ascertain what are the underlying work factors associated with these stressful encounters.

Also of some concern were the unsatisfactory interactions among supervisors (C) and directors (D) in their relationships with superordinates, and the relationships between supervisors and colleagues in general. Identifying sources of stress associated with interpersonal relationships is a critical area of research necessary to improving organizational morale and sense of purpose. As failure to cope with interpersonal relationships increases, the tendency to experience stress and burnout also increases. For instance, Maslach (1982) claimed that poor interpersonal relationships can contribute to "emotional stress . . . [and] rob the individual of a very valuable resource for coping with and preventing burnout" (p. 42).

Two major methods for coping with stress were identified by the respondents. Directors, superintendents, and specialists more frequently emphasized collegial support as a coping strategy, and consultants and supervisors relied more frequently on assistance from the immediate family. The help of superordinates was sought by less than 25% of all respondents. These findings are consistent with those of Swent and Gmelch (1977, pp. 33-35), whose study of Oregon school administrators revealed that sharing problems with colleagues and the acquisition of interpersonal and management skills were major coping strategies. Shinn (1982, p. 79) asserted that group and organizational coping mechanisms are more effective than individual coping techniques. Administrators in this study appeared to favor group coping strategies over personal strategies such as avoidance or palliation through increased dependence on alcohol or other forms of depressant.

The results of this study also indicated that recreational activities served as a coping mechanism. This finding supports research by Howard, Rechnitzer, and Cunningham (1975, p. 325), who revealed that regular sleep, exercise, and good health habits proved effective coping strategies for company managers in Ontario. Because stressors are ubiquitous, school administrators and central office personnel need to learn how to identify those coping strategies most effective in dealing with individual work stressors, or with any combination of work stressors. Such training in the identification of potential work stressors can serve to stimulate employee psychological and physiological well-being, while also enhancing organizational morale.

Overall, 35% of respondents were satisfied with the stress-coping programs in the district, while 37% were dissatisfied. This finding indicates that measures should be taken to examine the utility of such district-based programs for district-based administrators, and to suggest alternative approaches in dealing with work

stress. Are the programs too intimidating or lacking in sufficient anonymity? These questions need to be addressed, and other reasons need to be examined. The apparent lack of confidence in superordinates as a form of social support in coping with work stress may not come as a complete surprise. Why would one go to one's boss for help in coping with work-related stress? Might this not be interpreted as a sign of incompetence by the superordinate? However, for the good of the organization, there may be an advantage in knowing that personnel in the "lower ranks" are experiencing stress as a result of work load or other role-related factors due to the actions of those "higher up."

The current belief among researchers is that educators are not suffering unduly from work stress, at least when compared with certain high stress occupations. However, any form of distress in education is a matter of concern. As the personal comments of respondents indicate, work stress is implicated in the development of ill health, frustration, job dissatisfaction, a declining sense of personal achievement, and a deterioration in interpersonal relationships with peers and family.

Fergusson (1984, p. 97) stated that educator stress and its implications for individuals and school systems requires immediate attention. Friesen and Williams (1985, p. 31) note that there is a need for further study and development into the causes and consequences of stress in education. The authors of this paper agree with this need for more research on stress in education. Using the model of organizational stress developed for the purposes of this paper, we have attempted to highlight how specific intraorganizational stressors accounted for differential stress responses among district-based educational administrators. Sources of coping with work stress were identified, and both immediate responses to and long-term consequences of work stress were outlined. Further examination of the conceptual model underlying this research is needed in order to assess more fully the effectiveness and utility of specific coping strategies in dealing with work stress. Particular attention should focus on whether coping strategies are more effective prior to the immediate stress response, or as intervening variables between immediate effects and long-term responses. In this regard, and as reported in this article, social support as a buffer to immediate stress effects and a moderator of prolonged stress needs further research, specifically in an educational context.

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STEVEN L. McSHANE

and

LAWRENCE T. PINFIELD

Simon Fraser University

Teacher Expectations Regarding the Impact of Two Staff Reduction Policies

School administrators in British Columbia and other jurisdictions have been faced with the difficult task of reducing the size of their teaching force. Although knowledge of the teachers' opinions regarding the various reduction-in-force options would help administrators in their choice of action, little research has been conducted on teachers' attitudes toward human resource policies. This study examined the opinions of a sample of teachers in two British Columbia school districts regarding their outcome expectations and overall evaluation of two reduction-in-force actions. One alternative included an early retirement program while the other did not. The results indicated that the teachers sampled had a neutral opinion of the option with the early retirement program and viewed the option without early retirement even less favorably. This pessimism was also reflected in the organizational outcomes they expected to result from each of the two options. Overall, opinions were associated most strongly with two possible outcomes: the general quality of education and teacher morale.

With decreasing enrolments and tighter government fiscal policies, many Canadian and US school districts have recently been faced with the need to reduce the number of teachers that they employ. In some areas, the magnitude of these reductions has been quite dramatic. In some districts of British Columbia, for example, school enrolment has decreased by over 30% from the peak experienced during the late 1970s. In addition, the provincial government's financial restraint program announced in 1982 has established higher pupil-teacher ratio targets for elementary and secondary school systems. The result for most school districts in British Columbia has been an oversupply of teaching staff. Administrators addressed this

Dr. McShane, assistant professor in Human Resource Management, is currently researching several aspects of personnel management in the public and private sectors, including employee socialization, wrongful dismissal, manpower planning, and job evaluation.

Dr. Pinfield, associate professor in the Faculty of Business Administration, is currently studying the structural attributes of internal labor markets and the policies by organizations to promote flexibility in employment conditions.

problem first by trying to increase their budgets through negotiations with the provincial government and, failing that, by reducing other costs in order to avoid reducing the teaching complement. Increasing revenues through local taxation has also been considered, but school boards have been reluctant to move in this direction for a variety of reasons, including the current economic recession. Even with capital cost reductions, it has been necessary to reduce the number of teaching staff in several British Columbia school districts.

School district administrators have a number of options available to reduce the number of teaching staff (Bishop, 1979; Cuban, 1979; Luce, 1983). First, there are policies which temporarily reduce the number of full-time equivalent teachers while still keeping the original number of teachers on the payroll. Depending on contractual obligations and other constraints, administrators can institute job sharing arrangements whereby two or more teachers "share" one position (Growly, 1972; Meltz, Reid, & Swartz, 1981). Alternatively, an agreement could be reached where all staff reduce their hours of work. Voluntary temporary layoffs or leaves of absence could also be encouraged, particularly by allowing the affected teachers to continue their participation in the pension plan and other employee benefits (Scharffe, 1983).

Various human resource policies can also be considered which permanently reduce the number of teachers in the school district. A hiring freeze is one of the least painful options of this sort because the number of teachers is reduced only through attrition. Unfortunately, as one study discovered (Luce, 1983), turnover declines so dramatically during times of restraint that this option rarely satisfies all the staff reduction needs of the organization. Voluntary terminations, usually in the form of "buyout" packages, have also been offered in order to reduce staffing costs.

More commonly, administrators have turned to permanent layoffs, even though this option is one of the least popular (Phelan, 1983). Layoff criteria vary. Teacher associations argue that administrators should rely solely on seniority as the determining factor. Alternatively, these decisions are sometimes determined by the teacher's performance evaluations and the school district's needs in specific subject areas.

Finally, early retirement policies have been introduced. Here the organization encourages teachers to retire before their normal superannuation date by offering special financial incentives. These incentives may include a few years' salary or a top-up of pensionable earnings for those near retirement age.

In determining the best manpower policy for reduction in force, superintendents and other school administrators must carefully examine both the short-term and long-term implications of these actions (Flynn & Niven, 1982). In particular, human resource practices can affect the performance, commitment, and satisfaction of teaching staff, the degree of cooperation and conflict throughout the school system, and the overall quality of the educational system. Some of these problems may become immediately apparent while others emerge only after several years if the human resource practice is continued.

The immediate impact of reduction-in-force and other human resource policies is usually clearly recognized by administrators. For example, it is evident that layoffs create uncertainty regarding job security. This uncertainty tends to demoralize teachers and increases the incidence of burnout (Phelan, 1983; Scharffe, 1983). There is also evidence that resource scarcity generates conflict (Schmidt & Kochan,

1972). Specifically, Whetton (1980) has suggested that organizational decline tends to exacerbate interpersonal and interunit conflict. This conflict is likely to occur with across-the-board reductions in particular, because the scarcity is spread throughout the entire organization rather than localized within a few subunits. Depending upon which reduction-in-force practices are used, and how effectively they are implemented, a significant loss of motivation and commitment amongst teaching staff can also result (Levine, 1984; Luce, 1983).

Although the choice of reduction-in-force policies such as hiring freezes, early retirement, and layoffs are typically decided on the basis of the immediate or short-term organizational outcomes, the long-term demographic changes that these policies create should not be overlooked. Indeed, the long-term demographic consequences can be much more tenacious and costly to the organization than the more immediate concerns. Organizational demography refers to the composition of a group of employees with respect to their age, sex, educational level, skills, length of service, and other features (Pfeffer, 1983). The demographic structure of employees is affected by the flow of people into, through, and out of the organization. Human resource policies and practices which alter these flows ultimately alter the shape of the organization's demography in the future. For example, an increase in the rate of hiring reduces the median tenure of employees, whereas early retirement and seniority-based layoff practices increase the median tenure. These actions may also alter the demographic features of employees across hierarchical levels and thereby may change future promotions within the system (Kefitz, 1973; Rosenbaum, 1979; Stewman & Konda, 1983).

There is increasing evidence that the demographic structure of an organization (or a group of employees within the organization) can have a profound impact on organizational effectiveness. Katz (1982) has recently explained how the innovativeness and flexibility of work groups tend to decrease as the average tenure of members in the group increases. In this respect, Husby and Riffel (1979) reported that older teachers tend to be less innovative in their methods and somewhat less open to the concerns of students. The authors explained that this situation tends to be exacerbated during times of restraint because the more energetic and successful teachers are more likely to leave the school district. In a related study, Dembiski and Gay (1980) reported a negative correlation between the average age or experience of a group of teachers and the achievement of students taught by that group. They concluded that school districts should frequently replenish their human resource complements with younger teachers in order to generate new energy and innovative ideas.

The loss of more senior teaching staff may also have undesirable consequences for the school system. In one survey of British manpower reduction practices, employers in several industries regretted losing so many senior people through early retirement (Flynn & Niven, 1982). They discovered that the younger age structure of the work force created by the early retirement policy had weakened the stability of the organization. Several writers have explained that more senior employees tend to provide the social foundation from which corporate values are maintained and transmitted (McNeil & Thompson, 1971; Ouchi & Jaeger, 1978). These values act as a form of organizational control which stabilize the activities of the workforce. When a large proportion of the senior staff leave, this form of stability and control weakens.

The level of interpersonal and intergroup conflict throughout an organization can also be affected by the demographic structure of its workforce. McCain,

O'Reilly, and Pfeffer (1983) reported that earlier hiring practices led to large age gaps and length of service gaps among faculty in some departments of a large university. These gaps tended to generate conflict due to the differences in values held by the various cohorts within each department. Thus, in departments with large length of service and age gaps, conflict was higher, and this led to a higher rate of turnover. In terms of manpower policy, this finding suggests that reduction-in-force actions such as hiring freezes and seniority-based layoffs can lead to gaps in the demographic structure of teachers within a school system, which can lead to dysfunctional conflict.

Given the complex implications of reduction-in-force policies on the school system, administrators may wish to consider the expectations that teachers have regarding the various options being considered. In particular, a better understanding of how teachers evaluate the impact of layoffs, early retirement, and other actions can help administrators assess teacher reactions to these policies as well as identify other outcomes which they had not recognized previously. This additional information would ultimately assist the decision-maker in choosing the best reduction-in-force option under the circumstances (Bass, 1983). So far, there has been very little published research on teacher attitudes and expectations regarding various manpower options, particularly where those options are being actively considered and would directly affect the teachers being surveyed.

The main objective of the present study is to identify the preference for an early retirement program among a sample of teachers in two British Columbia school districts, and to explore their expectations regarding the demographic and organizational consequences of reducing the teaching force with and without the early retirement program. The analysis centers around two sets of basic research questions. First, which of the two reduction-in-force options (i.e., with or without early retirement) is preferred, and which organizational outcomes most influence this preference? The answer to these questions will enable administrators under conditions of retrenchment to more clearly understand teachers' preferences and the problems they anticipate with or without an early retirement program. The second set of questions which this study addressed is: Which demographic changes do teachers expect will result from each option over the next five years, and how accurate are these expectations? Analysis of this issue will help us to determine how valid the teachers' beliefs are, at least with respect to anticipated changes in the demography of the teaching force.

Method

Research Sites

The data for this study were gathered from a sample of teachers in two large school districts in the Lower Mainland of British Columbia. As part of a larger research project on human resource planning in the public school system, these two school districts were invited to participate because both were facing a significant oversupply of teachers over the next few years, and both were in the process of determining how to best reduce the size of their respective teaching forces. One of the districts employed approximately 520 elementary and 390 secondary teachers during the 1983-1984 school year. The other district is a slightly larger jurisdiction which employed approximately 550 elementary and 420 secondary teachers during the 1983-1984 school year.

In both districts, administrators were deciding whether to continue an early retirement program which had been first introduced two years earlier in the two school districts. In other words, they were essentially choosing between two reduction-in-force options. The first option called for the continuation of an early retirement program for the next five years. The surplus number of teachers would also be reduced through normal attrition with a general hiring freeze, except for exceptional needs (e.g., French immersion). If necessary, the supply of teachers would be further cut by the nonrenewal of contract personnel. Only when all contract teachers had been laid off would continuing teachers be laid off. Although it was hoped the last stage of this first option would be avoided, the administrators had indicated that seniority would be the most likely criterion. The second option followed the same stages as the first except that there would be no early retirement program. Thus the number of teachers would first be reduced through attrition, followed by the nonrenewal of contract teachers, and finally the layoff of continuing teachers on the basis of seniority. For the sake of simplicity, the two alternatives will be labeled as the early retirement and no early retirement options, respectively.

The participants in this study included teachers from eight elementary and two secondary schools in the two school districts. The schools were not sampled randomly, but were selected on the basis of their representativeness and availability to participate. An 11th school declined to participate, ostensibly because the principal felt that the survey questions would further upset the teachers. The two secondary schools were fairly large, each employing between 70 and 85 teachers. The elementary schools were much smaller with approximately 15 to 30 teachers in each.

The data were collected by a questionnaire administered to all teachers in attendance at general meetings in each of the ten schools. The researchers first explained the purpose of the study and described the two policy options to the teachers. Both options were also described in the questionnaire. At the end of the meeting, the teachers handed in the completed questionnaires anonymously. Over 60% of the teaching staff in each school (and virtually all of those in attendance at each meeting) completed the questionnaire. The final sample consisted of 217 teachers; 124 were from District A and 93 were from District B.

Measures

The questionnaire consisted of three sections for each of the two options. In the first section, the teachers were asked to indicate what changes in the demographic characteristics of the teaching staff would result from each option over the next five years. Eleven potential demographic outcomes were listed in this section (e.g., "average seniority of teachers") and the answers were marked on a 5-point response format ranging from "much higher" to "much lower." The second section asked the teachers to assess what effect each option would have on several aspects of the educational system over the next five years. Thirteen possible organizational outcomes were listed in this section (e.g., "quality of graduating students") and these answers were also indicated on a 5-point response format ranging from "much higher" to "much lower." The final section consisted of a single item which asked the respondents to indicate on a 5-point scale how favorably or unfavorably they viewed that particular option overall. The three sections of questions were then repeated for the second option.

The items on potential demographic and organizational outcomes were based on several sources of information. A number of items were identified from the literature on organizational demography, organizational decline, and human resource planning. School administrators in the two districts as well as in a smaller third school district were also interviewed in order to identify their expectations. In one of the school districts, a special joint committee of administrators, principals, trustees, and representatives from the teachers' association was consulted, and an early draft of the questionnaire was reviewed. In the other district, the administration, teachers' association, and principals in the selected schools were approached separately. Some items also resulted from personal interviews with several teachers and from a pretest of an earlier questionnaire on a sample of teachers. (These teachers were not included in the final sample.)

Results

Demographic Outcome Expectations

Prior to examining the teachers' overall opinions and expectations of specific organizational outcomes of each option, data on their expectations regarding demographic changes are presented. The objective of this is to identify the type of demographic changes anticipated by the sample and to compare these expectations with the results of a computer-based model (described below). To the extent that the computer-generated projections are accurate, this will allow us to examine the validity of the teachers' perceptions.

Table 1 presents the teachers' initial expectations of the impact of the two manpower options on the demographic structure of teachers in the school system over the next five years. The respondents generally believe that the percentage of teachers over 50 years of age would increase and the percentage under 35 years would decrease, no matter which reduction-in-force policy option was chosen. However, the teachers judged that the early retirement option would result in a smaller increase in the proportion of teachers over 50 and a smaller decrease in proportion of teachers under 35 than the option which excluded the early retirement program. Consistent with these observations was the expectation that the average seniority of teachers in each school district would increase much more if the early retirement option was not chosen. In other words, the continuation of the early retirement program was judged to significantly moderate the aging of the teaching work force in these two districts.

Table 1 also indicates that teachers expected significantly more continuing (i.e., permanent) teachers to be laid off and significantly fewer contract (i.e., temporary) and continuing teachers to be hired if the early retirement program was not used to reduce the size of the work force. In contrast, the respondents anticipated that there would be a slight increase in both the percentage of teachers going on a leave of absence and the number of contract teachers who would not receive a further contract, no matter which reduction-in-force option was implemented.

It should be noted that teachers were generally pessimistic about both options. Generally, they expected an increase in continuing teacher layoffs and a reduction in both contract and continuing teacher hirings under either scenario. Finally, the survey participants anticipated a slightly smaller decrease in the percentage of contract teachers and a slightly larger increase in the percentage of part-time teachers under the early retirement option. The increase in the percentage of people teaching outside their primary subject area was predicted to be about the same under both options.

TABLE 1
Expected Demographic Outcomes of Human Resource Options

Demographic Outcome	With Early Retirement		No Early Retirement		<i>t</i> -value
	Mean	S.D.	Mean	S.D.	
1. Percent Over 50 Years	3.49	1.10	4.33	0.86	-10.06***
2. Percent Under 35 Years	2.45	1.11	2.08	1.07	4.79***
3. Average Seniority	3.54	0.94	4.05	0.80	-7.00***
4. Percent Going on Leave	3.14	0.97	3.24	1.08	-1.29
5. Non-renewal of Contract Teachers	3.35	1.33	3.30	1.46	0.41
6. Number of Continuing Teachers Laid Off	3.23	0.94	3.69	0.99	-5.31***
7. Number of New Contract Teachers Hired	2.48	1.15	2.13	1.10	3.84***
8. Number of New Continuing Teachers Hired	2.14	1.00	1.92	0.89	3.07**
9. Percentage of Teachers Who Are on Contract	2.73	1.18	2.50	1.29	2.46*
10. Percentage of Teachers Who Are Part-Time	3.63	0.87	3.48	1.01	2.30*
11. Percentage of Teachers Teaching Outside their Primary Subject Area	3.97	0.85	4.01	0.81	-0.77

* $p < .05$; ** $p < .01$; *** $p < .001$. *N* ranges from 208 to 217.

Response Range: 5 = much higher, 1 = much lower.

Many of the demographic changes predicted by these teachers can be compared with human resource projections developed by the authors on each of the two school districts. As part of the mandate of the research project, the project team gathered data from personnel records on the demographic characteristics of teachers in each school district over each of the previous four years. From this information, estimates of human resource flows into, through, and out of each district were established and computed as age-dependent probabilities for elementary and secondary teachers in each district. The probabilities of a teacher entering or leaving the system in a variety of ways were estimated using historical patterns. These flow parameters were then entered into an advanced stock-flow computer simulation model developed by the Institute of Manpower Studies (1983) in Great Britain. The model is similar to the method described by Mahoney, Milkovich, and Weiner (1977) except that separate probabilities are computed for each age group for greater precision.

The results of the computer simulation paralleled the expectations of the teachers in many respects.¹ The projections for both school districts indicated a general aging of the work force under both scenarios, although the increase in the proportion of teachers over 50 would be smaller under the early retirement option. The respondents also correctly indicated that there would be much lower hiring levels of contract and continuing staff and an increase in the number of contract teachers whose contract would not be renewed. While fairly accurate in many respects, the teachers' expectations were somewhat more pessimistic than the computer-based projections regarding the layoff of continuing staff. The human

resource planning model projected only a few layoffs (i.e., 20-30) of continuing teachers in the secondary system of one of the districts between 1986 and 1989 if early retirement is not continued. However, the same district is projected to have an equivalent shortfall of elementary teachers during that period of time. Through selective transfers, the layoff of any continuing teacher could be avoided under either policy option.²

Overall Favorableness and Organizational Outcome Expectations

One of the central concerns of this study was to identify the teachers' preference for an early retirement program and to find out which specific outcomes seem to influence this preference. The respondents' overall favorableness to each option was marked on a 5-point anchored scale. The early retirement option was given, on average, a slightly better than neutral response ($\bar{X}=3.19$, $SD=1.22$) whereas the option without early retirement was generally perceived to be somewhat unfavorable ($\bar{X}=1.96$, $SD=0.88$). The early retirement option was rated significantly higher than the no early retirement option ($t=12.25$, $p<.001$). However, it is evident that the participants in this study are not enthusiastic about either manpower policy.

As was described earlier, 13 potential outcomes of various reduction-in-force actions were identified from the literature as well as from discussions with administrators and teachers. The teachers in the present study were asked whether there would be more or less of each of these outcomes under each of the two policy conditions over the next five years. The results, which are shown in Table 2, could assist administrators who are contemplating either of these actions in anticipating the specific concerns that teachers may have.

As the mean scores for all 13 outcomes in Table 2 indicate, the respondents have a generally gloomy outlook on the future of their organizations over the next five years, no matter which manpower option is chosen. There are differences in the teachers' judgments of the two options, however, which led them to favor the early retirement option. For example, they anticipated that the general quality of education and of graduating students would decrease, but not quite as precipitously, under an early retirement program.

A similar pattern emerged regarding the respondents' judgments of the six outcomes regarding teaching staff. Teacher morale, skills, commitment to students, involvement in extracurricular activities, and overall effectiveness were expected to decline and the incidence of teacher burnout was expected to increase. However, the introduction of an early retirement program was believed to significantly attenuate the severity of these changes. In particular, Table 2 indicates that the infusion of new skills, knowledge, and talent would be less adversely affected by the inclusion of an early retirement program.

Table 2 also indicates that teachers expect the reduction-in-force actions with early retirement to improve only marginally the level of cooperation or reduce the level of conflict than the actions without early retirement. Specifically, cooperation between teachers and administrators and, to a lesser extent, relations between teachers and students are expected to be less severe with early retirement. However, these improvements are marginal compared with the changes reported above regarding the teaching staff and educational system.

In order to identify the relationship between the specific organizational outcomes and the overall favorableness ratings for each option, two stepwise

TABLE 2
Expected Organizational Outcomes of Human Resource Options

	With Early Retirement		No Early Retirement		
Organizational Outcome	Mean	S.D.	Mean	S.D.	t-value
A. The Educational System					
1. General Quality of Education	2.52	0.91	2.22	.79	4.75***
2. Comprehensiveness of Educational Services Offered	2.31	0.87	2.25	0.74	1.08
3. Quality of Graduating Students	2.68	0.73	2.52	0.70	3.03**
B. Teaching Staff					
4. Morale of Teaching Staff	2.12	1.01	1.91	0.75	3.02**
5. Infusion of New Skills, Knowledge, and Talent	2.41	1.12	1.88	0.84	7.73***
6. Teacher Commitment to Student Development	2.70	0.79	2.49	0.69	3.49***
7. Teacher Involvement in Extra-Curricular Activities	2.39	0.96	2.02	0.78	5.53***
8. Incidence of Teacher Burnout	3.66	1.18	3.98	1.07	−3.84***
9. Overall Teacher Effectiveness	2.52	0.86	2.26	0.76	4.28***
C. Cooperation and Conflict					
10. Conflict Among Teachers and Department	3.52	0.81	3.47	0.81	0.62
11. Cooperation Between Teachers and Administrators	2.75	0.69	2.59	0.68	3.09**
12. Relations Between Teachers and Students	2.76	0.69	2.62	0.71	2.47*
13. Conflict Among Schools Within the District	3.25	0.69	3.34	0.67	−1.78

* $p < .05$; ** $p < .01$; *** $p < .001$. *N* ranges from 208 to 217.

Response range: 5 = much higher, 1 = much lower.

regression analyses were conducted. Each stepwise equation calculated the weight of the organizational outcome as a predictor of the overall favorableness rating for each reduction-in-force option. The results of this analysis showed that the general quality of education and the morale of teaching staff were the only two organizational outcomes listed in Table 2 which uniquely explained variance in each of the two human resource options. One-quarter of the variance in the overall evaluation of the early retirement option and one-third of the variance in the no early retirement option were explained by these items.

Discussion and Conclusions

The findings reported in this article indicate that the teachers surveyed were comparatively more favorably inclined towards the human resource policy with an early retirement program than the same set of actions without early retirement. In a more absolute sense, on the other hand, the respondents were not very enthusiastic about the consequences of either option. The early retirement choice averaged slightly above neutral on the scale of overall favorability while the no early retirement choice rated much lower.

These negative expectations were also reflected in the teachers' opinions of the specific organizational outcomes resulting from either option. They felt that an early retirement program would attenuate the adverse impact of retrenchment of the performance, commitment, and satisfaction of the teaching staff, but the changes would still be for the worse. Similarly, the general quality of education and the quality of graduating students were expected to decrease over the next five years, although not quite as precipitously under the early retirement option.

These observations reflected the general pessimism that many public school teachers in British Columbia felt at the time of this research. Many felt closed in on one side by the government cutbacks and on the other by only modest public support for, and understanding of, the teachers' predicament. Possibly a more favorable policy option exists in the minds of teachers, but the two reduction-in-force alternatives included in this study were identified by school administrators as the most feasible.

Based on the multiple regression results, the respondents' overall evaluations of the two reduction-in-force options were influenced mainly by the anticipated changes in the general quality of education and teacher morale. This suggests that the teachers' concerns are balanced between the school system and their own welfare, rather than totally influenced by one or the other. This issue of cooperation and conflict did not figure prominently in their overall opinions of these two policy alternatives.

Another interesting finding that emerged is that the participants' expectations regarding the demographic changes resulting from each human resource option were comparable to the projections generated from the computer-based human resource planning model. However, they were also more pessimistic about the layoff of continuing teachers than the computer estimates indicate. To the extent that the computer projections are valid, the teachers in this sample appear to have reasonably accurate perceptions of the demographic alterations resulting from specific human resource actions. Only a general sense of pessimism tends to bias their estimates slightly.

There are grounds for believing that these findings are generalizable to other school districts facing the need for substantial reductions in their teaching complements. In this study, elementary and secondary teachers in two school districts were included in order to increase the generalizability of the results. The findings were substantially the same for each of these groups. The teachers all faced various degrees of restraint as well as an aging workforce, and therefore saw early retirement as a relatively desirable human resource option. Where other school districts similarly have an aging teacher population and face the need to reduce the number of teaching staff, the findings reported here may be quite relevant. Future research on teacher preferences and expectations is required, however, to better understand the implications of early retirement and other human resource policies under different demographic and environmental conditions.

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Notes

1. Due to space limitations, the actual computer projection results are not shown here. They are available from the authors on request.
2. The reader should be cautioned that the computer model does not take into account skill differences among teachers. Due to an oversupply of certain skills (especially in secondary schools), layoffs may be necessary if retraining is not possible.

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BETTY A. COLLIS

and

LLOYD OLLILA

University of Victoria

An Examination of Sex Differences in Secondary School Students' Attitudes Toward Writing and Toward Computers

In order to examine the basis of the assumption that writing-related computer experiences might be an effective way to improve the attitudes of adolescent females toward computers, attitudes of secondary school males and females toward writing and toward computers were measured and compared. Consistent sex differences were found, with females more positive about writing than their male peers but less positive than males with respect to attitudes toward computers and computer users. The results support the use of writing as a focus of computer literacy experiences for secondary school females, in that the use of the computer as a writing tool may serve to transfer the positive feelings that females have about themselves and writing to the attitudes that they develop about themselves and computers.

Sex differences in secondary school students' attitudes toward computers and in their participation in computer-related studies and activities are a subject of comment and concern (Bakon, Neilson, & McKenzie, 1983; Chen, 1985; Schubert, DuBois, & Wolman, 1985). Most of the evidence upon which concern is based is either data describing sex differences in enrolment in computer science courses or anecdotal observations ("Many teachers are noticing that most of the students who come to the computer room during their free time are boys," Sanders, 1985, p. 23). It is assumed from this type of evidence that females have less positive attitudes about computers than do males, although little empirical work has been done to support this assumption (Sanders, 1984). Lockheed (1985) summarizes the current evidence about gender association and computers by stating that "recent data on sex differences in computer use at home and at school support the idea that our

Dr. Collis is a member of the Department of Psychological Foundations at the University of Victoria and is involved in various projects investigating the impact of school computer experiences on students' attitudes and achievement.

Dr. Ollila is a member of the Department of Communication and Social Foundations at the University of Victoria and specializes in reading and writing development.

culture is defining computers as predominantly male machines" (p. 116). She, like others, warns that "dire consequences" can befall females who are "left behind in an increasingly technological society" (p. 120).

To help prevent these dire consequences, many individuals and agencies have already produced intervention strategies the aim of which is to increase the amount of voluntary computer use for females as well as improve their attitudes toward computers. One of the strategies which is frequently recommended is to promote word processing as a focus of school-based experiences (Lockheed & Frakt, 1984). Word processing is perceived as likely to be more attractive to females than the typical programming orientation of secondary school computer studies (Lockheed, Nielsen, & Stone, 1983). These recommendations are based on the assumptions that females have a positive attitude about writing and that this positive orientation will transfer to their computer experiences. The systematic measurement of the attitudes of secondary school students toward computers and toward writing is a necessary first step in the investigation of these assumptions. There has, however, been little systematic development of measurement instruments for these purposes.

Writing apprehension, as a form of negative attitude toward writing, has been studied by Daly (1979) and Daly and Wilson (1983). The latter found males to be more apprehensive about writing than are females. Price and Graves (1980) also note sex differences in writing attitude and cite "the stereotype of female superiority with language" (p. 151) as contributing to relatively negative attitudes toward writing in males. They conclude that such negative attitudes will affect writing achievement "thus creating a problem that teachers will have to attack at the roots—the attitudes themselves" (p. 152). Overall, however, in the field of writing research, studies of writing attitudes are rare and writing-attitude scales are not readily available. The Third National Writing Assessment (NAEP, 1980) is one of the few major sources of writing-attitude items.

Similarly, only a few scales that deal with secondary school students' attitudes toward computers have appeared in the literature (Minnesota Educational Computing Consortium, 1979; Ellsworth & Bowman, 1982). The majority of discussions involving sex differences in secondary school students' attitudes toward computers are based primarily on informal observations.

This study therefore had two levels: first, to develop appropriate instrumentation to measure secondary school students' attitudes toward writing and toward computers; and second, to use data obtained from these measures to study the following questions: (a) Are there sex differences in secondary school students' attitudes toward computers or in their attitudes toward writing? and (b) Are secondary school females more positive and self-confident about writing than they are about computer activities? The overall purpose of the study was to provide specific evidence with which to address the assumption that word processing experiences might provide a remedy for the "dire consequences" facing secondary students, particularly females, who are uncomfortable with technology.

Method

Subjects

There were two major parts of the study. One involved one group of students in the development and implementation of a writing attitude assessment and the second involved three additional groups of students in the development and implementation of a computer attitude assessment.

TABLE 1
Student Samples for Writing and Computer Attitude Assessments

Attitude Focus	Male		Female	
Writing Assessment ^a	Grade 9	Grade 12	Grade 9	Grade 12
	56	91	55	85
Computer Assessment	Grade 8	Grade 12	Grade 8	Grade 12
Phase 1 ^b	43	36	42	35
Phase 2 ^b	246	237	197	206
Phase 3 ^a	539	419	479	381

N.B.a. School District A
b. School District B

A total of 3,014 secondary school students in Grades 8, 9, and 12 in two school districts in British Columbia were involved in the overall study. Table 1 summarizes the student sample.

The writing assessment study and phase 1 of the computer assessment study involved 18 intact classes of eight different junior and senior secondary schools in the two school districts. The second phase of the computer attitude study involved all the Grade 8 and Grade 12 students in one of the two school districts. The third phase involved a random selection of approximately 50% of the Grade 8 and Grade 12 students from the second district. More than 70% of the students in the computer attitude study had had some experience with computers in school; almost all of this experience was in the context of computer literacy units within mathematics classes or elective computer science courses.

Procedure

Instrumentation. Two attitudinal question sets were developed in this study. To measure attitudes toward writing, 10 items were selected from the Third National Writing Assessment (NAEP, 1980) and an additional 20 statements were constructed by the researchers based on previous reviews of the literature in both reading and writing (Ollila & Michaux, 1983). All items were accompanied by a Likert-type scoring scale, with "1" designating "strongly agree" and "5" designating "strongly disagree." Negatively worded items were recoded prior to analysis so that a low score on each item represents a more positive attitude than does a high score. The items, and summary statistics relating to the items, are given in Table 2.

Data from this administration of the writing attitude survey were analyzed to select a subset of the items most representative of underlying trends in the student responses. Principal components factor analysis was used for this purpose. Three factors with eigenvalues greater than 1.00 were extracted and were interpretable,

TABLE 2
Means of Responses to Writing Attitude Survey

Item	Grade		Grade	
	9 Female	9 Male	12 Female	12 Male
1. I like to write down my ideas.	3.09 ^a	3.07	2.11	2.45
2. I am no good at writing. (R)	2.70	2.83	2.24	2.05
3. Expressing ideas through writing seems to be a waste of time. (R)	2.28	2.75	1.69	1.81
4. People seem to enjoy what I write.	2.81	3.36	2.77	2.74
5. I expect to do poorly in composition classes before I take them. (R)	2.83	3.07	2.36	2.07
*6. I look forward to writing down my ideas.	3.49	3.44	2.70	2.93
7. I write for other reasons besides school.	2.42	3.16	2.29	2.82
*8. When I hand in a composition, I know I'm going to do poorly. (R)	2.44	2.43	2.19	1.89
*9. I enjoy writing.	2.57	3.42	2.17	2.44
10. I am afraid of writing essays when I know they will be evaluated. (R)	2.67	2.70	2.70	2.42
*11. I feel confident in my ability to clearly express my ideas on writing.	3.21	3.50	2.73	2.42
12. I avoid writing. (R)	2.77	3.05	2.11	2.19
13. If I had my way, everybody would study writing.	3.91	3.60	3.60	3.74
14. Writing is one of the most useful subjects I know.	2.81	3.34	2.52	2.65
15. All people should be good at writing.	2.87	3.05	2.89	2.98
16. Writing is very interesting.	3.12	3.30	2.30	2.59
17. Writing might be worthwhile if it were taught correctly. (R)	2.93	2.97	3.71	3.65
18. I wouldn't bother writing if I didn't have to. (R)	2.91	2.91	2.12	2.45
19. I can't see how writing can help me. (R)	2.36	2.30	1.58	1.71
20. I really enjoy writing.	2.68	3.61	2.39	2.68
21. I like to work hard at writing.	3.16	3.66	2.52	2.96
22. I find writing useful at home.	3.38	3.48	2.46	3.05
*23. I sometimes do extra work in writing at home.	3.18	3.62	2.81	3.36
24. I can't see how writing will be useful to me outside of school. (R)	1.98	2.31	1.64	1.79
25. Writing teaches me to be accurate.	2.93	3.01	2.29	2.41
26. Writing is a waste of time. (R)	2.51	2.84	1.47	1.71
27. Writing is the best subject in school.	3.54	3.82	3.29	3.74
28. My parents write at home.	2.61	2.55	2.88	2.58
29. I will write after I finish school.	2.96	3.39	2.34	2.43
30. Being a good writer will help me in my adult life.	2.43	2.66	2.08	1.89

Notes:
a. The lower the score, the more positive the attitude.
b. An asterisk (*) indicates the variable was selected for the final survey instrument.
c. (R) indicates the scoring was recoded so that strongly disagree = 1.

having loadings greater than .700 after varimax rotation. The factors were labeled Enjoyment, Self-Confidence, and Utility of Writing. The item with the strongest loading on each of these rotated factors was selected for inclusion in the final survey instrument. In each case, the item was judged to be representative of the interpretation given to the retained factor. These items are indicated with asterisks in Table 2.

The set of computer attitude items was developed using McKennell's (1974) 3-phase model for surveying attitude structures. The first phase of this model requires that a representative sample of the target population aid in generating the content pool from which the selection of items for the measuring instrument is made. The second phase involves administering a large sample of the items in the content pool to a representative group of subjects so that reduction techniques can identify the subset of items most appropriate for a final instrument. The third phase involves administering the final instrument to a new sample of subjects.

In this study the first phase involved interviews with 156 secondary students. The interview questions asked the students to describe their opinions about people who use and like computers, about difficult aspects of learning to use computers, and about ways computers can be used in school and at home. Students also responded to sentence completion items and to a semantic differential instrument whose purpose was to see if the students had similar interpretations of the concepts "computer," "microcomputer," and "home computer," but discriminated these concepts from that of "video recorder." The semantic differential analysis showed the students to cluster the three computer terms closely together, but to distinguish this cluster from videotape recorder. This supports the validity of the interchangeable use of the words "computer," "microcomputer," and "home computer" throughout the subsequent phases of the study.

Verbatim statements representing typical clusters of comments made by the students during these interviews were identified. These were developed using a Likert-type response format and administered to an additional 40 students. Some items were replaced or rewritten, based on analysis of these data, and a Preliminary Instrument consisting of 87 statements was prepared. By using these procedures, the content validity of the survey items, as representatives of secondary school students' attitudes toward computers was supported. It was not the researchers' opinions about what students thought, but the students' own words which formed the preliminary survey instrument.

Phase 2 of the study involved the administration of the Preliminary Instrument to a different sample of 887 Grade 8 and Grade 12 students. The data were analyzed using both factor analysis and discriminant function analysis, and the set of 24 computer attitude items to be used in the final survey instrument was selected. Full details of the procedure used in phases 1 and 2 (the instrument development and validation) may be obtained from the first author on request (Collis, 1984).

Phase 3 involved the final survey administration. The final survey instrument for this study consisted of 29 attitude items: the 24 computer attitude items (still in students' own words) and the five writing attitude items. Each item was accompanied by provision for Likert-type scoring, where "1" again represents "strongly agree" and "5" represents "strongly disagree." Negatively worded items were recoded before data analysis, so that a low score is consistently associated with a positive attitude.

Results

Items on the final survey along with mean scores and standard deviations of student responses are given in Table 3. The statements relating to attitudes toward writing are marked with asterisks.

TABLE 3
Means and Standard Deviations, Final Survey Instrument, Attitudes Toward
Computers and Other School Subjects

Item	Grade 8 Male (n=539)	Grade 8 Female (n=479)	Grade 12 Male (n=419)	Grade 12 Female (n=381)
1. I think that a home computer can be very interesting	1.70 ^a (0.94) ^b	1.87(0.84)	1.85(0.80)	1.87(0.77)
2. People managed before without computers, so computers are not really necessary now. (R)	2.38(1.14)	2.79(1.09)	2.40(1.25)	2.64(1.12)
3. I would like to learn how to use a computer.	1.76(1.02)	1.90(0.96)	1.96(0.99)	1.91(0.89)
*4. When I hand in an essay, I feel I'm going to do poorly. (R)	3.01(1.16)	2.91(1.18)	2.79(1.18)	2.54(1.08)
5. People who like computers are often not very sociable. (R)	2.49(1.21)	2.40(1.19)	2.70(1.19)	2.35(1.08)
6. Computers are exciting.	1.95(1.05)	2.33(1.08)	2.51(1.07)	2.63(1.01)
7. I would not expect a good athlete to like computers. (R)	2.37(1.19)	2.33(1.09)	2.31(1.10)	2.07(0.97)
8. Computers will never interest me. (R)	1.73(1.06)	1.92(1.00)	1.92(1.02)	1.96(0.96)
*9. I look forward to writing down my ideas.	2.90(1.09)	2.73(1.06)	2.83(1.05)	2.50(1.04)
10. I would be embarrassed to tell my friends that I would like to join a computer club. (R)	2.15(1.21)	2.13(1.09)	2.32(1.17)	2.05(0.99)
11. If you like science you will like computers. (R)	2.62(1.06)	2.38(0.98)	2.59(1.09)	2.51(1.04)
12. The world would be better off if computers were never invented. (R)	2.00(1.15)	2.19(1.04)	2.08(1.18)	2.19(1.08)
13. Working with computers is not my idea of fun. (R)	2.18(1.17)	2.36(1.14)	2.61(1.20)	2.71(1.16)
14. Typing would be the biggest problem I would have in learning to use a home computer.	3.12(1.34)	3.63(1.20)	3.18(1.36)	4.05(1.18)
15. Computers do not interest me. (R)	1.98(1.19)	2.22(1.16)	2.24(1.19)	2.37(1.12)
16. You have to be smart to like computers. (R)	1.95(1.00)	1.84(0.97)	2.06(1.04)	1.97(0.94)
*17. I feel confident in my ability to clearly express my ideas in writing.	2.67(1.03)	2.56(1.00)	2.43(1.02)	2.29(1.00)
18. Computers are fun.	1.74(0.98)	2.04(1.02)	2.21(0.98)	2.28(0.87)
19. Microcomputers are easy to use.	2.81(0.99)	2.93(0.71)	2.80(0.90)	2.99(0.57)
20. If my family had a home computer, I would probably use it more than anyone else.	2.08(1.19)	2.48(1.28)	2.38(1.28)	2.83(1.22)
21. Females have as much ability as males when learning to use a computer.	2.14(1.24)	1.44(0.91)	1.95(1.15)	1.26(0.66)
*22. I sometimes write stories at home even if they are not assigned for school.	3.74(1.27)	3.05(1.34)	3.84(1.28)	3.34(1.38)
23. I am concerned that people might make computers too powerful in the future. (R)	3.19(1.25)	3.67(1.11)	3.35(1.36)	3.88(1.07)
24. I would rather spend an evening doing something new with a computer than go out with my friends.	3.31(1.31)	3.86(1.14)	4.14(1.05)	4.29(0.88)
25. I enjoy working with computers.	1.94(1.00)	2.26(1.02)	2.44(1.07)	2.65(0.94)

Item	Grade 8 Male (<i>n</i> = 539)	Grade 8 Female (<i>n</i> = 479)	Grade 12 Male (<i>n</i> = 419)	Grade 12 Female (<i>n</i> = 381)
26. Using a computer in math class would make math more fun.	1.73(1.04)	1.79(1.04)	2.15(1.07)	2.20(0.99)
27. It would be hard for me to learn how to program a computer. (R)	2.53(1.24)	2.61(1.14)	2.51(1.14)	2.73(1.10)
28. Computers are boring. (R)	1.83(1.15)	2.03(1.15)	2.23(1.15)	2.24(1.03)
*29. I do not enjoy writing stories or essays. (R)	3.18(1.36)	2.62(1.29)	3.08(1.37)	2.57(1.31)

Notes: a. The lower the mean score, the more positive the attitude.
1 = most positive, 5 = least positive.
b. Standard Deviations are given in parentheses.
c. An asterisk indicates a writing-attitude item.
d. (R) indicates the item was recoded, so that strongly disagree = 1.

An inspection of the means in Table 3 indicates that within each grade, males tend to be more positive than females with respect to computer-related attitudes while females tend to be more positive than males with respect to writing-related attitudes. When so many items are involved, it is not appropriate to analyze the data using individual *t*-tests because of the inflation of experiment-wise error rate involved in repeated univariate tests (Hummel & Sligo, 1971). Instead, the items were considered in two sets for statistical analysis. Discriminant function analysis was used, first for the set of 24 computer attitude items, and second for the set of five writing attitude items. In each analysis, the variables were used as predictors of membership in the four sex/grade groups—Grade 8 males, Grade 8 females, Grade 12 males, and Grade 12 females—and an *a priori* hypothesis of significant discrimination in the overall multivariate space was specified. Table 4 summarizes the two discriminant function analyses.

Inspection of the group centroids indicates that sex differences produce the strongest discrimination in the attitudes of secondary school students toward both computers and writing. This result, combined with the mean scores, indicates that although secondary school females are less positive and confident than their male peers with regard to computer use (see items 1, 2, 6, 8, 12, 13, 14, 15, 18, 19, 20, 23, 25, 26, and 27), these same females are more positive than their male peers with respect to writing. The writing attitude results replicate those obtained during the earlier administration of the 30-item writing attitude instrument in which Grade 9 females indicated more positive responses than did males for 28 of the 30 attitude items; and Grade 12 females, for 23 of the 30 items (see Table 2).

In addition, the discriminant analyses show age differences can be used to interpret the locations of the group centroids relative to the second axis in each multivariate space. An examination of the mean scores relative to age shows that the Grade 8 students were more positive about computers than were the Grade 12 students, but less positive about writing than the Grade 12 students.

TABLE 4
Results of Discriminate Function Analysis, Four Groups,
Attitudes Toward Writing and Toward Computers

Dimensions	Computers		Writing			
	Wilks' lambda	P	Wilks' lambda	P		
1 through 3	0.615	0.000	0.894	0.000		
2 through 3	0.853	0.000	0.961	0.000		
3	0.972	0.000	0.998	0.363		
Discriminate Functions Evaluated at Group Centroids						
	1		2		3	
	Computers	Writing	Computers	Writing	Computers	Writing
Grade 8						
Males	−0.774	0.176	−0.135	0.196	0.143	−0.041
Females	0.238	−0.401	−0.434	0.104	−0.194	0.026
Grade 12						
Males	−0.144	0.310	0.596	−0.071	−0.145	0.058
Females	0.954	−0.095	0.081	−0.330	0.201	−0.038

Discussion

This study supplies data to support the observations of Lockheed and others (Chen, 1985; Lockheed, 1985; Lockheed & Frakt, 1984) that secondary school females are less positive about computers than their male classmates. The results also support previous findings (Daly & Wilson, 1983; Price & Graves, 1980) that females are more positive than their male peers about writing. The study extends these two areas of previous research by comparing attitudes toward computer-related topics and toward writing within the same sample of secondary school students. The overall tendency of secondary school females, either in Grade 8 or in Grade 12, to be more negative than their male classmates about computer experiences suggests that efforts should be made to find approaches to school computer activities that are more attractive to females than those which are currently provided. Because the same girls who are more negative than their male classmates about computers are more positive than their male classmates about writing, Lockheed and Frakt's (1984) suggestion that word processing might be a way to increase computer motivation for female students seems to be supported.

This study does not specifically support the assumption that a transfer of positive attitudes from one experience to another will occur, or in particular, that the general positive affect that surrounds the writing situation for females can promote a reorientation of their perceptions of themselves as computer users. These questions still need investigation. However, the suggestion that writing be used as a major computer experience activity for secondary school females does seem better supported because of this investigation.

Given the findings of this study, how can educators proceed if they wish to associate computer experiences with writing in the secondary school? Word processing, or text editing in the writing class, is the most obvious suggestion, and many language theorists have written extensively on the positive impact that computer-aided writing can have on the development of the writing process (Daiute, 1985; Wood, 1985). But, in addition, a new perspective on computer literacy could be developed. This approach would emphasize the use of the computer for communication and information retrieval. Programming could be analyzed as a form of communication and its similarities and dissimilarities to natural language discussed. Information organization and retrieval using student-created or public data bases could be looked upon as a language experience. This awareness of the commonalities underlying computer and written literacy could bring new insights into the overall nature of communication and literacy (Evans & Collis, in press).

Another benefit of a computer literacy approach which emphasizes writing and communication is also suggested by the sex difference data in this study. Males were relatively negative about writing compared with females but positive about computer use. Perhaps using a computer for writing will have a positive effect on attitudes for males as well—if females' attitudes toward writing can transfer to their computer-related attitudes, males' positive orientation toward computers might similarly transfer in a way which will improve their attitudes toward writing.

Research does show that "student attitudes play a major role in determining performance [and that] students are found to perform close to their own estimates of their ability" (Duke, 1985, p. 673). Embedding one experience in which students feel relatively low in interest and self-confidence (computer work for females, writing for males) within another in which they feel more interested and more competent (writing for females, computer work for males) seems to be a valuable strategy.

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JOSEPH J. BLASE

and

EDWARD F. PAJAK

University of Georgia

The Impact of Teachers' Work Life on Personal Life: A Qualitative Analysis

The studies reported in this article examined teachers' perspectives on the impact of work life factors on their personal lives. Unstructured and structured interviews, open-ended questionnaires, and observations were used to collect data from teachers. Study data were analyzed according to qualitative methods for grounded theory research. These analyses permitted the development of categories which describe the negative and positive effects of teachers' work life on personal life. Data from the present study are discussed primarily in terms of Coser's (1974) greedy institution notion.

Although some progress has been made in understanding the meanings teachers derive from their work, relatively little research has focused on the relationship between the teachers' work life and personal life. This is especially striking because studies have repeatedly suggested that the two life domains may interact in significant ways (Waller, 1932; Dreeben, 1970; Lortie, 1975).

Thus far, only a handful of studies of teachers have explored dimensions of work life and personal life interaction. Burden (1982) investigated professional and personal life interactions using interview data gathered from 15 teachers. The impact of professional life stresses on personal life were discussed in terms of role conflict. Blumberg, Kleinke, Pajak, Blase, Mehlenbacher, and Mehlenbacher (1982) studied several hundred teachers on Friday afternoons in a barroom setting. Their data suggested that certain structural and functional features of schools influenced the meanings teachers attributed to the barroom setting. Among other things, the barroom provided opportunities for cathartic release, camaraderie, warm informal

Dr. Blase is an associate professor of educational administration whose research focuses on teachers as workers.

Dr. Pajak is an associate professor of curriculum and supervision with research interests related to the roles of teachers and central office instructional supervisors.

relations, and territorial ownership, factors which contrasted sharply with how teachers experienced the school setting. Lowther, Gill, Coppard, and Tank (1983) examined the relationship between teacher work experiences and wider life experiences. Teachers' work satisfaction was found to be an important determinant of life satisfaction. Zimmerman, Skinner, and Birner (1980) focused on the relationship between job strain, job satisfaction, and marital satisfaction for home economics teachers and their spouses. A significant positive relationship between job satisfaction and marital satisfaction was identified. And finally, Hange (1982), in a study of adult developmental issues of teachers in their fifth year of teaching found, for example, that occupational and personal life demands (e.g., taking care of children) were in conflict.

Clearly, research addressing the work life-personal life interface is quite limited. The available research has relied on small samples, and, in most cases, has been defined narrowly in terms of specific work life-personal life problems (e.g., stress, satisfaction). It is also apparent that much of the existent work in this area has employed relatively simplistic concepts (e.g., role conflict) and hypotheses (e.g., spillover). The use of such concepts has failed to produce detailed qualitative descriptions of the complex interactions which occur between the teacher's professional and personal life domains.

Given the theoretical and practical importance of understanding teacher work life and personal life interactions, and the paucity of data regarding personal meanings attributed to such interactions (Kando & Summers, 1971), the studies which serve as the data base for the present article were designed to explore these interactions comprehensively. Because of space limitations, this article focuses only on how teacher work life factors were perceived to affect teachers' personal lives. The relationship between personal life factors and their impact on work life are described elsewhere (Blase & Pajak, 1985). Generally, the data suggest that work demands—that is, similarity of professional life and personal life responsibilities, restrictive community norms, low occupational status, and poor salary—have a significant limiting effect on teachers' personal lives. In view of these findings, the study data are discussed primarily in terms of Coser's (1974) "greedy institution" notion and Gouldner's (1966) concept of reciprocity.

Research Problem and Procedures

As noted, data for this article were drawn from two qualitative studies of teachers. The first, a comprehensive case study conducted over a two-year period (1983-1985) was designed to explore interactions between teachers' work lives and personal lives. The study sample consisted of 80 full-time teachers in a comprehensive biracial urban high school in the southeastern United States. This high school included 1,535 students, three counselors, one principal, and two assistant principals. The school represented diversity within both its faculty and student population. Such diversity is important to grounded theory research methods which emphasize theory development (Glaser, 1978; Glaser & Strauss, 1967).

Within the research setting, attempts were made to maximize variation among teachers. For example, teachers were asked to review a list of faculty initially selected for participation in the research project to determine if the range of perspectives related to the problem under investigation, had, in fact, been assessed. Additional teachers were included in the final interview sample. Although observations and open-ended interviews were used to collect data from all teachers at the

school setting, in-depth (tape-recorded) interviews with 40 teachers were used to collect the bulk of the data.

In generating data for the present article, teachers were specifically asked to: (a) identify and describe work factors (e.g., events, responsibilities, policies, problems, individuals) which affected their personal lives, and (b) discuss the impact of these factors on their personal lives. Approximately 50% of the research data (total=2,500 transcribed pages) were pertinent to the present analysis.

A second study was designed to collect additional data on the research problem from a wider range of teachers. In grounded theory research, this procedure is utilized to increase the probability of generating new categories and elements of categories identified from previous research (Glaser, 1978; Glaser & Strauss, 1967; LeCompte & Goetz, 1982). This procedure allowed the researchers to confirm/disconfirm categories and themes associated with the original case study.

Specifically, the Teacher Personal-Professional Life Inventory (TPPLI), an open-ended instrument, was developed by the authors to collect data regarding the teachers' perspectives on the effect of work factors on personal life. According to Allport (1942), a questionnaire can be a useful personal document in qualitative research addressing subjective perceptions of persons. "Any self-revealing record that intentionally or unintentionally yields information regarding the structure, dynamics and functioning of the author's life" (p. xii) can be considered a personal document. A questionnaire is defined as a personal document when the research participant controls the wording of the answers.

The TPPLI was constructed to collect interpretive data from teachers in a manner which encouraged free expression of personal meanings associated with the relationship between their work and personal lives. Two versions of the instrument were administered to different samples of public school teachers. To permit variation of responses (Lofland, 1971), the first version only asked teachers to discuss the impact of work factors on their personal lives. Because this instrument required about one hour to complete, it was administered to teachers ($n=55$) taking coursework at major universities in Iowa and Georgia. Examination of these data indicated that a somewhat more structured version of the instrument could organize the research participants' responses without undue control. In essence, the second version of the TPPLI was modified to reflect only general categories analyzed from data collected via the first administration of the instrument.

Glaser and Strauss (1967), Glaser (1978), and Bogdan and Taylor (1975) emphasize that when the generation of substantive categories, hypotheses, and theory (vs. verification) are the research goals, data should be solicited from a range of groups to develop categories and their properties. The TPPLI was administered to 48 male and 97 female teachers: elementary, middle, junior, and high school. Again, given the amount of time required to complete the instrument (approximately 1 hour 15 minutes), the study sample was drawn from teachers enrolled in a range of university courses in education at three major universities in northeastern, southeastern, and midwestern regions of the United States during 1984 and 1985.

On the TPPLI, teachers were directed to identify and describe two work factors which importantly affected their personal lives. Teachers were also asked to describe feelings associated with each factor. Additionally, teachers described the impact of work factors on family, friends, and community. This procedure generated a total of 271 pages of detailed descriptive data. These data were analyzed by two researchers independently. The researchers met to discuss questions and issues

related to the analysis of categories. An independent assessment of the researchers analyses yielded 93% agreement.

It should be emphasized that the data presented in this article were produced by qualitative procedures rooted in assumptions, values, and goals which differ from those associated with quantitative enquiry. In qualitative analysis, the emphasis is on the discovery of new knowledge and the development of data-based categories and ideas. The goal of such research is to develop categories (and their properties) from relatively unstructured data. Clearly, the ideas discussed in this article cannot be generalized to all teachers in a statistical sense. However, the exploratory studies reported are grounded in the notion that understanding the perspectives of the teachers studied could contribute to basic knowledge about teachers and the meanings they associate with the impact of work factors on the personal life domain. Further, it is contended that the categories and theoretical ideas described in this article are most likely basic elements of the problem investigated. These ideas are considered the means of generalization in qualitative research which focuses on the generation of categories and theory (Hanson, 1981).

Overview of Study Data

The research data pointed out that such factors as excessive work demands, community, salary, university coursework, job status, and colleagues were defined by teachers in terms of their negative effect on personal life. Dimensions of these and other factors, such as students, opportunities to enhance personal interests, community, colleagues, university coursework, vacations, and salary were perceived to have a positive impact on the teachers' personal lives. Analyses of the study data indicated that teachers perceived negative work life factors as exploiting their personal life domain. The categories below describe the meanings teachers themselves attributed to work life factors which affect their personal lives. The description begins with the most frequently reported categories for negative and positive effects respectively.

Results: The Negative Effects of Work-Life Factors on Personal Life

Table 1 summarizes the negative effects of work life factors on teachers' personal lives.

Excessive Work Demands

The data indicate that teachers defined work demands as excessive. Teachers discussed "always being busy," and having "never a moment to regroup" while on the job. Many elementary teachers pointed out that they had no planning periods. Secondary teachers suggested that planning periods were often "used up" for meetings and conferences. In addition, school-related work, for example, meetings, parents' conferences, clubs, coaching, and public performances added substantially to the work day. "Take-home work" (e.g., lesson preparation, receiving calls from parents, calling parents, grading, typing, handouts) extended work time further into the evening. Demands of this nature adversely affected their personal lives. According to the data, teachers spent about 15 hours per week in school-related work at home. Teachers experienced work as physically and emotionally "draining." This meant "neglected" spouses and children.

Even though I enjoy teaching, my own children suffer. After I have taught other people's children all day long, I do not give my own children the patience or time they deserve. It

TABLE 1
Negative Impact of Work Factors on Teachers' Personal Lives
(Self, Family, Friends, Community)

Work-Related Factor	Self	Family	Friends	Community
Excessive Work Demands	Increase in feelings of anger, frustration, exhaustion, trapped	Increase in neglect of spouse and children	Increase in isolation	Decrease in involvement
Excessive Work Demands (Emotional Overload)	Increase in feelings of worry, stress, tension, exhaustion, alienation	Increase in conflict and feelings of alienation	Increase in isolation	Decrease in involvement
Community	Increase in feelings of resentment	(a) NDE	Increase in support from	Sought experience outside
Salary	Increase in feelings of regret for entering profession: anger, hopelessness, envy, futility	Decrease in ability to provide middle class lifestyle. Moon-lighting took time from	Increase in social interaction	Increase in alienation
Coursework	Increase in feelings of fatigue, guilt, swamped	Decrease in time available	Increase in social interaction	Decrease in involvement
Job Status	Increase in feelings of guilt, anger, injustice, inadequacy	NDE	Increase in conflict	Increase in alienation
Colleagues	Increase in feelings of anger, hostility, guilt	NDE	Increase in support from	NDE
Absence of social contact	Increase in feelings of regret, sadness	NDE	Increase in empathy from and support from	NDE
(a) NDE	No Discernible Effect			

is hard to run a home and a classroom. On Mondays I feel I have the world under control . . . Wednesdays I begin to get behind . . . and by Thursdays, I really don't care. Everything has to wait to the weekends.

The data point out that teachers also ignored personal health (e.g., prepared quick meals, failed to exercise) and personal interests (e.g., hobbies, entertainment). A few teachers divulged that their "sex lives had been ruined" because of excessive job demands. Teachers reported that unrealistic job demands created adverse moods and significantly contributed to family conflict. The data also show that teachers required "supportive families," that is, families that are "understanding," "tolerant," "helpful" with the ability to "take care of themselves" in order to deal with work stresses related to inordinate demands.

Take-home work reduced or altogether eliminated time with friends. Many teachers became so time-conscious that, as one stated, "I resented my friends for even calling on the phone." In spending time with friends, several indicated they "felt guilty for not working." In the teachers' view, friends perceived them as "crazy" and "workaholics." Six single teachers indicated that take-home work, "had a devastating effect" on their personal lives. Other professional friends were viewed as having more active social lives. A few teachers reported "[having] friends who understand and respect me for what I do." The data show that teachers restricted or eliminated involvement in community, (e.g., church activities, community services, and professional organizations) because of work demands.

Several teachers believed that lack of opportunities to "rest and relax" led to chronic fatigue ("feeling constantly drained") and adversely affected work performance. Such feelings were associated with experiencing work as "day-to-day survival."

Teachers indicated that they felt anger, frustration, resentment, stress, panicky, cheated, used, drained, guilty, failure, burned out, rushed, exhausted, over-extended, bitter, anxious, disheartened, pressure, fatalistic, furious, trapped, impatient, and on the verge of collapse, as a result of the workload.

Excessive Work Demands: Emotional Overload

While emotional overload was a problem for most teachers represented in the general category of excessive work demands, some teachers, for whom this was an issue, focused specifically on this aspect of the problem and its implications for their personal lives. That is, "worries," "stress," "tensions," and "problems" associated primarily with student discipline, and helping students reach goals proved to be "emotionally and spiritually" taxing:

I teach in a high school. I teach lower levels and mostly all black. The school is about 85% black. It's a different culture and set of values. Many are drop outs who have returned. They are in trouble with the law, etc. The days are tense and riddled with incidents—one confrontation after another over large things and trivial ones. The tension mounts until 3:30. When I come home, I don't want to hear another word from anyone or give another order. I don't want to hear the TV or cook supper. I just want to go to sleep and forget it all or maybe watch my aquarium and blot out that day's events.

Quite frequently, job tensions precipitated negative mood states which caused teachers to "neglect" spouses and children. Conflict with family members and "feelings of alienation" were related to negative job moods as well. The data point out that teachers became "ill tempered," "less patient," and "less tolerant" with family members:

I'm not as caring and nurturing with those I am closest to as I would like to be. I often feel I am better with strangers.

Examination of the findings indicated that teachers' moods had no direct impact on friendships (note: teachers reported rarely socializing with friends). Negative moods were however related to decreased community participation. Feelings associated with negative mood states were similar to those previously described for this category.

Impact of Community

Teachers expressed concern about living and working in small communities in which their personal lives were "under the watchful eye of Big Brother." Teachers resented "being on stage," "in a fishbowl," and subject to the "constant scrutiny" of parents and students. Teachers explained that strict prohibitive norms which governed activities such as drinking, dancing, and casual dress deprived them of both privacy, anonymity, and opportunities for self-expression:

I have lived and taught in a small rural community. The members of the community have definite ideas on how teachers should behave even on their own time and those ideas are very conservative. If we went out to dinner at a local restaurant, I would think twice about having a drink since the parent, brother or sister of my students would most likely serve it and certainly others would be watching. If we went out on the weekend, or went shopping, or went to the post office, we ran into my students and their families. I always had to be on my best behavior and never could "let my hair down." I felt as if I was on display or under examination most of the time. I felt that I was a teacher but not a real live person lots of times.

More broadly, teachers resented community expectations for "exemplary role models," particularly in the context of what was perceived as community hypocrisy. Others objected to "being put into the position of experts on every matter" which usually required extra work and responsibility.

Several teachers explained that, because of conservative community norms, entertainment was sought out of town (half of the teachers reported no effect on family). Close community scrutiny also restricted the kinds of activities that teachers engaged in with friends. Many teachers, the data show, chose friends who could "commiserate" with their feelings. It should be noted that concerns about community were reported for suburban, urban, and rural teachers.

With regard to the problem of public scrutiny, teachers expressed feelings of resentment, anger, and alienation. Others reported guilt and confusion because of the conflict between "what I think I should do and what I want to do." Feelings of being "cheated," "limited," and restricted were described.

Salary

Teachers indicated that salaries were significantly inadequate. Although most teachers reported having working spouses, "living from paycheck to paycheck" was a common concern. Personal and family interests, entertainment, vacations, and recreation were severely restricted. One teacher remarked, "I only entertain twice each year . . . This is a burden." Several indicated that the salary level meant living in "unattractive neighborhoods with unprofessional people." In addition, financial problems were viewed as straining family life. Three males reported that they had been accused of "not being good providers" by their wives. Expenditures for the children were monitored closely. For single teachers along these lines, concerns were no less prevalent: "It means sharing some type of hovel with two or three roommates."

Teachers explained that salary levels demanded that they moonlight. This expanded the work day, reduced preparation time, and deprived teachers of time with their families. Several teachers expressed concern about future retirement. Many “regretted” entering the profession and indicated that they would leave when the opportunity arose. Teachers for whom salary was an issue explained that financial strains limited involvement with friends. Simply put, they could not afford many of the “functions and activities” in which friends were involved. (Several indicated no impact here.) Low salary negatively affected teachers’ perceptions of community. Salaries were defined as reflecting lack of community respect and appreciation. For some, this adversely affected self-concept. Several teachers pointed out that the low salary structure “alienated” them from community involvement.

Feelings were described as follows: anger, frustration, alienation, hopelessness, low self-esteem, depression, guilt, envy, futility; being used, unappreciated, exploited, resentful, and regretful.

Coursework

According to the data, teachers perceived “great pressure” from school systems to continue coursework toward advanced degrees. However, “time, the cost of attending, travel expenses, books, preparation, tests, research time” detracted from the quality of their personal lives. Summers were spent at the university. During the school year, little time was available for family:

Some weekends when my wife and I are together, I end up spending most of my time at the library working. I feel guilty because our time together is so limited.

Teachers indicated that coursework interfered substantially with time for socializing with friends and involvement in community. With reference to the latter:

I have reduced membership in community organizations I enjoy being in. I don’t have as much interaction with my neighbors as I once did. I especially regret the loss of active involvement in my local political party activities.

In addition to anger and frustration, teachers expressed feelings of fatigue, guilt, pressure, being swamped, and envy (“of those with jobs which allow free time”).

Job Status: In View of Society

This category was defined more generally than community. Here, teachers suggested serious concern about the low status of their profession—the relative rank of the profession as compared to others—in society’s view. The significance of being a teacher in a society which “lacked appreciation” and “understanding” were strong in the data. Above all, teachers emphasized the public’s lack of respect and preoccupation with criticism:

With all the national publicity about our nation’s poor educational system, sometimes I have to think twice about why I went into such a low-paying, low self-esteem job. It’s really depressing when you meet someone and you tell them that you’re a teacher and they look at you like “Oh, you’re just a teacher. You’re a nobody.” It’s also depressing to have to take the blame for things that are not your fault—such as the educational system is so bad because we have such dumb, unqualified teachers!

Interestingly, the data show both defensiveness and acquiescence on the teachers’ part in response to public criticism and low occupational status. Teachers

indicated no important effect of the status issue on family. For some, status produced conflict with friends. A few felt they were "not taken seriously" by the community because they were teachers.

Feelings such as guilt, resentment, anger, defensiveness, injustice, and inadequacy were reported in connection with this category.

Colleagues

For some teachers, disagreements, conflicts, gossip, backbiting, rude behavior, and criticism with colleagues influenced their personal lives:

A particular teacher is highly critical . . . she whispers side remarks . . . while she is standing within hearing distance of a group of faculty members. All of her devious ways and vicious talk is the very center of my personal life as I have been unable to cope with the teacher hostility and not bring all the built up hostility home to my personal life.

Teachers indicated that negative feelings carried over into family life. Notwithstanding, families were usually supportive. Teachers perceived friends to be supportive as well. Impact on the teacher-community relationship was not evident in the data.

Feelings of anger, hostility, and guilt were expressed with regard to the behavior of colleagues.

Absence of Social Contacts

Two single teachers reported that being a teacher meant a limited social life. Teaching failed to make opportunities available to meet others:

I have remained single thus far and now I am finding that I want a family of my own. I think that the level of commitment that I've made in the past to work and school precluded opportunities to focus enough energy on a social life. As I near completion of my degree, I find myself looking with envy upon mothers with very young children.

Friends of these two teachers were colleagues; they were empathetic and supportive. The data indicated no affect on the teacher community relationship.

Feelings of regret and sadness were suggested in the data.

Results: The Positive Effect of Work Life Factors on Personal Life

Table 2 summarizes the positive effects of work life factors on teachers' personal lives.

Students: The Development of Interpersonal Competencies

The research data suggested that as a result of long term interactions with students, teachers develop knowledge of students' academic, social, and personal needs and problems. This category was specifically defined in terms of "becoming more human," themes related to the development of teacher "empathy," "tolerance," "patience," and "human sensitivity." In essence, interpersonal values (e.g., importance of student needs), skills, (e.g., listening) and predispositions (e.g., willingness to be supportive) were produced:

My 6th grade student died of brain cancer. I was profoundly affected by Stacy's dying. It was hard to understand how an 11-year-old could waste away, why an 11-year-old should suffer and die. . . . Stacy's death made me stop and see my students more individually. . . . Because of Stacy, I am not afraid to tell my students I love them, or that I'm afraid sometimes and I get frustrated and unhappy. . . . From Stacy I learned that I can make a difference in others' lives by sharing mine.

TABLE 2
Positive Impact of Work Factors on Teachers' Personal Lives
(Self, Family, Friends, Community)

Work-Related Factor	Self	Family	Friends	Community
Students (Interpersonal Competencies)	Increase in humaneness, tolerance, sensitivity	Increase in understanding and support from children	Increase in quality of friendship	a) NDE
Students (Self-Esteem)	Increase in self-respect, happiness, pride	Increase in harmony with family	Increase in harmony with friends	Increase in community involvement
The Job (Enhancement of Personal Interests)	Increase in personal growth, feelings of satisfaction, pride	Increase in quality of family life	Increase in sharing/development of mutual interests	NDE
Community (Professional Pride)	Increase in personal pride	Family receives special favors and invitations	Increase in quality of relationship	Increase in quality of relationship
Collegial Friendships	Increase in satisfaction, pride	NDE	NDE	NDE
Coursework (Knowledge)	Increase in knowledge	Increase of contribution	Increase of contribution	Increase of contribution
Vacations (Time)	Increase in time, personal interests	Increase of time	Increase of time	NDE
Salary	Increase in satisfaction, pursuance of personal interests	Increase in overall quality of life	Increase in socializing	NDE

NDE = No Discernible Effect

Most of the teachers whose comments were relevant to this category suggest that knowledge of students helped them to understand and provide support to their own children. Teachers became more empathetic, supportive, communicative, and less judgmental with their own children:

My knowledge of child development and differing learning modes has helped me to be a better and more understanding parent. Since I have two children, knowing that children learn in different ways has helped me not to expect or demand the same behavior performance and achievement from both . . . Most of the time my children benefit from my patience and understanding of various phases the children are passing through.

A few teachers stated that relations with friends benefited from interpersonal competencies learned at school. No important affect on teacher-community interaction was noted in the data. Major feelings expressed with regard to the development of interpersonal competencies were satisfaction and contentment.

Students: Teacher Self-Esteem

Teachers suggested that successfully influencing the academic and social lives of students impacted positively on their self-esteem and confidence:

Although at times I feel very pressured by all my commitments to family and students, I feel very good about the fact that I am able to make a difference in someone else's life. I have been out of teaching for a number of years (rearing a family) and I know the empty feeling from not being involved in the lives of others (other than family members). I like the feeling of being a person of my own . . . not just someone's spouse or mother.

Increased work satisfaction and self-esteem derived from helping students translated into "more harmonious" relationships with family and friends. Several teachers commented that the attitudes and skills they acquired from helping students enhanced their involvement with the community (e.g., work with social service agencies).

Feelings of respect, love, warmth, satisfaction, happiness, pride, and pleasure were related to helping influence students.

The Job: Enhancement of Personal Interests

The study data show that teachers develop interests, skills, and attitudes from the job which transferred directly to their personal lives. Subject matter interests (e.g., music, photography, health, fitness), competencies related to organizing and time management, and positive attitudes, for example, increased self-esteem, were mentioned most frequently. Teachers believed that the factors identified above enhanced family life. The comments of one teacher are illustrative:

I'm better organized. I accomplish more so I can be a better model to my children. I am teaching them to be task oriented.

Some of these teachers suggested that job-related personal interests deprived the family of time and caused resentment. Friends were viewed as benefiting from the teachers' growth because "they share in what I do." In a few instances, the community was defined as profiting in the same way, although most respondents indicated no affect in this regard.

Teachers linked feelings of satisfaction, pleasure, reassurance, pride, joy, success, excitement, belonging, and frustration with the enhancement of personal interests.

Community: A Source of Professional Pride

The available data suggest that teachers derive pride from community recognition. For instance, the role of expert, that some teachers found onerous, was defined by others as reflecting community trust and respect:

Teaching adds satisfaction and purpose and esteem to my personal life . . . It gives me status within my community because of the kind of work I do.

The teacher's family was viewed as "benefiting" from positive regard of the community. Special invitations and favors given to family members were indicative of community respect. Teachers claimed that in cases where communities "recognize the profession," family members experienced pride. Teachers also reported that their relations with friends and community were affected positively. In each case, teachers felt "proud" when they were "approached as experts" and "authority figures" by others.

Feelings of "pride" were most commonly connected with community respect. Teachers also felt trusted and important.

Collegial Friendships

Teachers reported that relations with their colleagues were frequently translated into personal friendships based on "shared interests" and common problems. (In fact, most of the study sample indicated that friends were usually teachers.) As one teacher remarked:

This gives me a feeling of satisfaction. It makes me feel that my job is a rewarding job because it offers friendships.

The data point to a positive impact on family, friends, and community, although the nature of this impact was unclear.

Feelings of satisfaction, contentment, pleasure, and gratefulness were related to collegial friendships.

Coursework: A Source of Knowledge and Pride

A few teachers perceived university coursework as a source of professional knowledge and self-esteem. Although coursework reduced the time with the family, friends, and community, teachers suggested that they had "more to offer" as people because of increased knowledge. For example, being a student provided "a good model" for their children.

Feelings of satisfaction, pride, confidence, commitment, and accomplishment were associated with coursework.

Vacations: Time with Family

Teachers who stressed the importance of vacations explained that little time for family was available during the school year and that family-related responsibilities were frequently ignored. Holidays and summer vacations, however, meant that "concentrated time" was given to family and friends. This alleviated feelings of guilt experienced throughout the year. Additionally, vacations meant extra income to some teachers through summer employment. The research evidence failed to clarify the impact of vacations on the teacher's community involvement.

Feelings of satisfaction were apparent with regard to vacations.

Salary: A Supplemental Income

Three female teachers defined their salaries as "supplemental." Consequently, "extra" money was available to meet family needs and pursue family interests. This, according to the findings, increased teachers' personal life satisfaction and enhanced the overall quality of family life. The supplemental income was linked to housing and neighborhood fun, and increased interaction with friends. No affect on teacher involvement with community surfaced in the data.

Teachers experienced increased satisfaction as a result of receiving "extra" incomes.

Summary and Discussion

This article is based on data drawn from two studies of American teachers. While positive effects were noted overall, the data revealed that work factors tended to spill over and adversely affect the teachers' personal life domain. Roughly about two-thirds of the data used for this analysis were related to the negative pattern described above. Not surprisingly, many of the factors discussed—excessive work demands, relationships with colleagues, salary, and job status—have been implicated in stress and burnout studies of American and British teachers (e.g., Blase, 1986; Cox, 1977; Kyriacou & Sutcliffe, 1978; NYSUT, 1979; Pratt, 1976).

Studies of Canadian teachers have shown that such problems as work and role overload (lack of adequate time) and relations with colleagues are important stressors. Other factors, however, salary (and moonlighting) and job status, have not been reported as critical to Canadian teachers (Bartell, 1984; Dubois, 1978; Friesen & Williams, 1985; Hiebert, 1985; Klas, Kennedy, & Kendall-Woodward, 1983; Syrotuik & D'Arcy, 1983). Indeed, for Canadian teachers, the latter issues may not be problematic in term of teachers' personal lives. Along these lines, Hiebert (1985) reports that while Canadian studies of teacher stress associated with demographic differences in the amount of stress or type of stress have demonstrated some consistency (e.g., stress related to insufficient time), most studies have failed to do so. This suggests that stressors and personal life effects may be specific to particular samples of teachers.

At a more abstract level, examination of the present study data indicate that the limiting effect of work factors on personal life occurs in a number of ways: First, overload factors related to the amount and difficulty of work appear to "drain" teachers physically and emotionally (Marks, 1977). According to the data, this directly limits teachers' time and energy for family, friends, and community. Work overload factors also contribute to the level of conflict in and disruption of a nurturing family structure. The limiting effect on the teachers' work life is further exacerbated by the similar requirements of the parental and teacher roles which seem to compound the problem of "getting away from the job" (compartmentalization). Thus, for teachers, effective disengagement and opportunities for recuperation tend to be particularly difficult. Second, salary level and corollary problems such as moonlighting limited teacher and family pursuance of personal interests. Intellectual aesthetic, recreational, and other activities were notably circumscribed because of low salary levels.

Third, the omnipresent moral expectations of the community deprived teachers of anonymity and made difficult involvement in and enjoyment of certain conventional social activities. This further minimized involvements outside of work. In many instances, unreasonable expectations were reported to have actually isolated

teachers from the communities in which they lived. Fourth, low occupational status was reflected in lack of appreciation and understanding on the part of community and society. Again, this alienated teachers from their communities and negatively affected teacher self-esteem, motivation, and commitment to work.

From the data described in this report, it appears that a fundamental conflict exists between the professional life and personal life demands of teachers. Indeed, it would seem that teachers often resolve this conflict in favor of professional demands. Functionally, time and energy commitments required by the job systematically preclude teacher participation in a wider range of familial, social, cultural, and political activities outside of the work setting. Stated bluntly, the professional life domain of the teacher frequently exists at the expense of the personal life domain.

It is understandable that perceptual data drawn from teachers would lead to the foregoing conclusion. According to Gouldner (1966) social exchanges in the American culture tend to be viewed within a reciprocation framework. That is, exchanges between individuals and others (e.g., institutions) are evaluated in terms of contingent benefits. When, for example, one's inputs are perceived to exceed one's outcomes (benefits), an unequal (or unjust) exchange exists. This may be referred to as "reciprocity imbalance." Gouldner argues that such imbalances destabilize social interaction and social organization. The data presented in this article (corroborated by research in other areas, such as teacher satisfaction and teacher stress) support the conclusion that, in the view of a significant percentage of teachers, unequal exchanges and reciprocity imbalance exist when the professional life and personal life domains interact.

Coser's (1974) classic discussion of "greedy" institutions captures an underlying element of the reciprocation problem analyzed from the data. Coser states:

Organized groups are always faced with the problem of how best to harness human energies to their purposes . . . Competition for loyalty and commitment is a perennial problem because these are scarce resources. Not only do human beings possess only finite libidinal energies for cathecting social objects, but their resources of time are similarly limited. As a consequence, various groups having a claim on individual's energies and time compete with one another in the effort to draw as much as they can, within normative limits, from the available pool of resources. The struggle over their allocation is as much a root fact of social life as is the competition of users of scarce resources in economic affairs. (p. 1)

Greedy institutions, Coser argues, make total claims on their members. They attempt to gain "undivided loyalty" and reduce the claims of competing groups. Certain religious sects, utopian societies, political groups, and family structures are defined as greedy institutions.

To be sure, the occupation of teaching has not evolved historically to require the level of commitment (totalistic) from its members suggested by Coser's concept of greedy institution. Clearly some degree of reciprocity exists. Nevertheless, the greedy institution concept is useful in sensitizing us to a moral issue: That time and energy, and moral, intellectual, and emotional demands typically placed on teachers may be inequitable with regard to compensation, status, recognition, and other such issues identified in the present research. If it can be argued that society has drawn from teachers beyond that which it has fairly returned (i.e., financial, social, and status rewards), and in fact, societal expectations work to undermine important familial and social structures, then the occupation of teaching may indeed be considered a greedy institution. It is our belief that society continues in its failure to comply with a basic principle of reciprocation from which individuals and groups judge interactions as just or unjust (Gouldner, 1966).

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PETER COLEMAN

and

LINDA LAROCQUE

Simon Fraser University

The Small School District in British Columbia: The Myths, the Reality, and Some Policy Implications

The purpose of this article is to consider the problem of the small school district from a new perspective. We first examine the policy goals likely to be held by provincial ministries (or state departments of education) to try to understand the past popularity of district amalgamation as a policy mechanism, what problems it is intended to address, and why it is thought to be the appropriate solution to these. We contend that the rationale for amalgamation is based on myths about the small school district, and in the next section we attack these myths, using longitudinal British Columbia data in a series of statistical analyses and some case study data and interpretations. Finally, we argue that the essence of the problem in British Columbia is mean school size, not district size, and that consequently the solution lies not in school district amalgamation, but in revisions to the way in which school districts are funded—the “fiscal framework” recently adopted by the Ministry of Education.

In 1945 there were 650 school districts in British Columbia; in 1984 there were 75. Despite the great increase in the number of students during that period, the number of districts dropped drastically, the result of several rounds of amalgamations. For example, an early Royal Commission report called *Survey of the School System* recommended that “consolidation of assisted schools be carried out wherever it seems educationally or financially desirable” (Putnam & Weir, 1925, p. 32). Other Royal Commission reports on education (Cameron, 1945; Chant, Liersch, and Walrod 1960; King, 1935) have urged a similar course of action. In the

Dr. Coleman is an associate professor in the Administrative Leadership Program of the Faculty of Education at Simon Fraser University.

Dr. LaRocque is a postdoctoral fellow in the Faculty of Education at Simon Fraser University. Both are currently involved in a study of school district norms and practices.

early 1970s the British Columbia School Trustees' Association commissioned five case studies of school district organization (Coleman, 1971; Levirs, 1971; Plenderleith, 1971; Robinson, 1970; Scribbs, 1971). These reports also favored consolidation. This phenomenon was not limited to British Columbia. Between 1940 and 1980, the number of students in American public school systems rose from 25,434,000 to 41,645,000; the number of school districts fell from 117,108 to 15,912 (National Center for Education Statistics, 1983).

Given this history of amalgamation in British Columbia, one might expect the variation in district size to be limited and the number of small districts to be few. In fact, neither of these expectations holds, as the data on school district size presented in Table 1 demonstrate. (These figures are based on the Statistical Report 1 of the 1984 BCSTA analysis of school district budgets.) School districts range in size from about 500 to 50,000. Although the mean district size is 6,380, fully half the districts in the province have fewer than 3,600 students. In fact, over one quarter of the districts have fewer than 1,500 students, and not even one fifth of them have more than 10,000 students.

No matter how one defines a "small" school district, then, there are obviously many in British Columbia. They continue to exist in spite of repeated waves of consolidation. Yet amalgamation still appears to be an attractive option to policy-makers. As recently as the spring of 1983 consolidation of districts was once again being considered as a policy option by the Sager Commission appointed to investigate the relationship between district size and operating costs as an aspect of the government restraint program. The Commission was dissolved, however, before reporting. In our ongoing study of school district ethos, trustees and senior administrators frequently tell us that the threat of amalgamation is always in the background. Certainly the frequency with which amalgamation is cited as a solution to a variety of problems suggests that small districts are seen as undesirable.

The purpose of this article is to consider the problem of the small school district from a new perspective. We first examine the policy goals likely to be held by provincial ministries (or state departments of education) to try to understand the past popularity of district amalgamation as a policy mechanism, what problems it is intended to address, and why it is thought to be the appropriate solution to these. We contend that the rationale for amalgamation is based on myths about the small school district, and in the next section we attack these myths, using longitudinal British Columbia data in a series of statistical analyses, and some case study data and interpretations. Finally, we argue that the essence of the problem is mean school size, not district size, and that consequently the solution lies not in school district amalgamation, but in revisions to the way in which school districts are funded, the "fiscal framework" recently adopted by the Ministry of Education.

The Policy Goals of Amalgamation

Mitchell and Encarnation (1984) identify three competing educational policy goals: efficiency, or a concern for cost effectiveness; quality, or a concern for student achievement; and equity, or a concern for both equality of educational opportunity and local control. They maintain that it is possible for a policy to facilitate the pursuit of all three goals, although generally only one of the goals is dominant at a time, often at the expense of the other two. Amalgamation can be considered as a policy option from the perspective of each of these three goals.

TABLE 1
School District Size in British Columbia, 1984

District Size	No. of Districts
0 - 1500	20
1501 - 3000	12
3001 - 4500	10
4501 - 6000	10
6001 - 10000	9
10000 - 15000	4
15001 - 20000	4
over 20000	4
mean=6380	
median=3606	

Efficiency

Consolidation is generally thought to contribute to efficiency through economies of scale, based on the assumption that as size increases, unit costs decrease. Proponents of amalgamation argue that such economies are realized mainly through lower administrative costs, lower maintenance costs, higher pupil/teacher ratios (and consequently lower teacher costs), and bulk purchasing. Certainly the reports of school district reorganization in British Columbia mentioned earlier accepted this premise:

The Commission considers that the consolidation of such districts would result in economies regarding administrative and some other costs. (Chant et al., 1960, p. 58)

There is a strong, though not completely linear, relationship between school district size and economy of school district operation. (Robinson, 1970, p. 23)

There are few alternative explanations for the difference in costs between large and small school districts which explain the fact as satisfactorily as the view that large districts achieve substantial economies of scale in their educational operations. (Coleman, 1971, p. 33)

The argument that consolidation would result in economies of scale is so compelling that it is rarely challenged. Instead, debate has tended to center on more technical issues such as the ideal unit size (see, for example: Cameron, 1945; Educational Research Service, 1974; Robinson, 1970) rather than on empirical evidence. Sher and Tompkins (1977) cite a number of studies which fail to find these economies of scale, and which even find evidence of diseconomies of scale due to, for example, increased transportation and distribution costs. They conclude that the success of an amalgamation policy, at least in terms of efficiency, depends on local circumstances, including population density and valuation levels; savings cannot be assumed.

In spite of some recent challenges to the assumption that district amalgamations result in economies of scale, it is still a powerful and well accepted policy mechanism. Its popularity with governments rests, of course, on the assumption that small school districts are inefficient, that their costs per pupil are necessarily higher than those of larger districts.

Quality

The quality of the educational program in small districts is often discussed in terms of either resources available or social climate. They reflect two entirely different approaches to assessing quality.

Proponents of amalgamation favor the former. They argue that consolidation contributes to the quality of the educational program by providing more and better resources. These include more qualified and experienced teachers, better facilities (laboratories, shops, libraries, gyms), a wider range of courses, and student support services such as counseling. As a result of all these resources, the argument continues, students learn more.

Two Canadian studies (Dibski, Lucas, Renihan, & Skaalid, 1983; Gleadow & Bandy, 1980) have found that the provision of student and teacher support services in rural districts is often inadequate, at least from the perspective of the teachers. Dunne (1977) reports similar findings in the United States. While there is some evidence that the resource levels of small districts are not as high as those of large districts, particularly with respect to facilities, this does not mean that their schools are poorly equipped (Gleadow & Bandy, 1980) and unable to offer a comprehensive program (Sher & Tompkins, 1977).

Parents and educators in small districts value qualitative aspects of the educational experiences: the slower pace and less pressured environment, and the closer, more informal ties between teachers and parents (Dunne, 1977; Gleadow & Bandy, 1980; Rosenfeld, 1977; Sher & Tompkins, 1977); the warmer, more supportive relationships between the teachers and the student (Dibski et al., 1983; Dunne, 1977); and the greater individualized attention and instruction given to the students (Dunne, 1977). These concerns are not weighted as highly as those pertaining to efficiency and resource levels when amalgamation decisions are made: "the benefits of consolidation seemed overwhelming and the costs minimal by comparison" (Sher & Tompkins, 1977, p. 45) even though they are very important to the people affected by the decision.

The view that small school districts do not provide the same quality of education as larger districts is less widespread than the previous myth, probably because achievement data are less readily available than cost data. This argument in favor of amalgamation is based on the myth that small school districts are ineffective, that they provide lower quality education than larger districts.

Equity

Traditionally, the goal of equity has been pursued through provisions for public participation in governance, particularly at the local level. Local autonomy was the hallmark of equity. Since the mid-1950s, however, equality of educational opportunity has been a major policy thrust. Thus the policy goal of equity has two quite distinct meanings.

Proponents of amalgamation argue that students will benefit from the expanded opportunities that amalgamation permits: the wider range of course offerings, the contact with a more varied group of teachers and students, the exposure to a wider range of experiences, and better preparation for the urban world. This argument is based on a concern for equality of educational opportunity, on a desire to ensure that students in small districts are offered the same kind of educational experiences as their counterparts in large districts.

Opponents of amalgamation, on the other hand, do not want their children to be “urbanized.” They value the close ties between the school and the community and the responsiveness of the system to local needs (Gleadow & Bandy, 1980). As Dunne (1977) explains, the issue “is not so much cash as control. Rural parents are reluctant to delegate school policy to distant ‘experts,’ and often feel that a ‘good education’ is close to home, both physically and academically” (p. 85). This argument, then, is based on a concern for local autonomy, particularly over the kind of educational experiences the students are offered.

There has been a long history of conflict between these two aspects of equity in British Columbia, particularly when amalgamation is at issue. For example, when Putnam and Weir (1925) recommended consolidation of school districts in British Columbia, they did so largely on the basis of equality of educational opportunity. They urged consolidation to be carried out “with the approval of local boards if possible, but in the face of their disapproval if necessary” (p. 32). Similarly, the Cameron report (1945) asserted: “We must have more equality than we have: if we cannot have it without complete centralization, we shall have to have that too; if we can have it and still preserve local control, let us by all means do so” (p. 37).

The conflict has been particularly prevalent since the 1970s. Local autonomy often meant that districts decided how much they wished to spend on education and, to some extent, what they spent it on. This, of course, resulted in differences in the educational programs offered throughout the province. Concern for equality of educational opportunity led to assertions that the province has a responsibility to ensure that the school districts, its creatures, did not contribute to inequality so that district of residence was associated with different levels of educational opportunity for students. This has been accomplished through increasing centralization of fiscal and program decisions, thereby limiting local autonomy.

Another aspect of the amalgamation argument, then, is that small school districts are inequitable, that is, they do not offer the same educational opportunities for students that larger districts do.

The Myths and the Reality

The mythology surrounding small school districts in British Columbia is very well established, having survived a variety of Royal Commission enquiries and numerous other investigations and reports. It parallels exactly a similar mythology in the United States, which has led to “the most successfully implemented educational policy of the past fifty years” in that country, the consolidation of small schools and small districts (Sher & Tompkins, 1977, p. 43). The three main myths about small districts are:

Small school districts are inefficient—their costs per pupil are necessarily higher than those of larger districts;

Small school districts are ineffective—they provide lower quality education than larger districts; and

Small school districts are inequitable—they do not provide the same levels of educational opportunity to students as larger districts.

Detailed discussion of these myths will inevitably require the introduction of an associated issue: that of school size.

Myth 1: Inefficiency

The costs of providing educational services are largely the costs of providing trained teachers. For example, in 1982 teacher salaries made up 76% of district operating costs in British Columbia. Teacher costs have two parts: salary levels and intensity (the ratio between students and teachers). In British Columbia, there is no relationship between district size and teacher salary costs per pupil. (For information on the sources of data, and technical information on analyses, see Coleman & LaRocque, 1984. For all correlations reported here, $p < .001$.) In effect, this means that salary schedules do not vary with district size. However, there is a distinct relationship between school size and teacher salary costs per pupil. The Pearson correlation coefficient is .45. Similarly, there is a strong relationship between school size and pupil/teacher ratio (PTR): the coefficient is .65. These relationships, which are obviously interactive, have remained stable over several years.

As a consequence of these relationships between school size and teacher costs, there is a strong association between school size and overall operating costs: For 1981 the coefficient was $-.58$; for 1984 it was $-.57$. Similarly, there is a strong and stable relationship between costs and PTR. Most importantly, there is an even stronger relationship between PTR and school size: .70 in 1981, and .65 in 1984. When they are considered together, these two variables, school size and PTR, accounted for 84% of the variance in operating costs between school districts in 1982. The impact of these variables considered jointly is much more important than either alone, and has been strengthening.

Small schools are very expensive to operate, because they require much lower PTRs than larger schools. This view is consistent with the British Columbia data and with the experience of educators; additionally, it seems to hold true in a variety of jurisdictions (Sher & Tompkins, 1977, p. 50). It is crucial to note that it is in conjunction with small schools that low PTRs become a major predictor of costs for school districts. Small schools are cost-inefficient. Because small schools occur disproportionately in small districts (the correlation between district size and school size for 1981 was .63), this school level inefficiency is at least *a*, and perhaps *the*, major cause of high costs in small districts, and is an extremely important element in any discussion of district efficiency.

This set of relationships for British Columbia is represented in Figure 1. In this representation the bracketed numbers show the strength of the association for 1984, the arrows show a posited causal connection and direction, and the double lines show an association which is not causal, but a consequence of other relationships.

Because the small districts of the province tend to contain the small schools, it seems at least possible that the prevailing opinion that small districts are inefficient is based on a confusion between district level and school level problems. When the effects of school size are statistically eliminated from the relationship between district size and per pupil costs, the resulting correlation coefficient is .05 for 1981 and .02 for 1984. These relationships are statistically and practically meaningless.

The simple conclusion is obvious: Small districts are exactly as efficient as larger ones. Small schools, however, are inefficient. To say that small districts are as fiscally efficient as larger ones may conceal the fact that in order to achieve this level, given the penalty of small schools, small districts have had to divert spending from services and activities common in larger districts. This spending in small

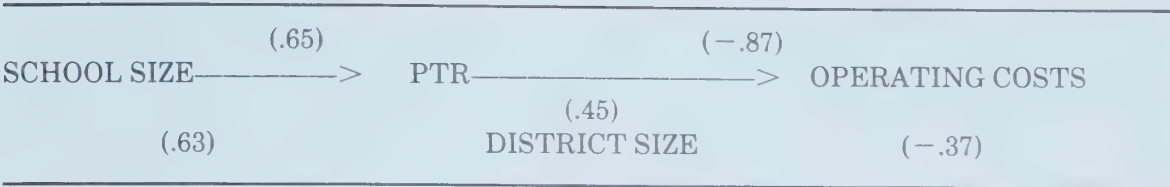


Figure 1: The relationship between district size, school size, PTR, and operating costs in British Columbia in 1984.

districts supports the inevitably lower PTRs required by the small schools. In the graphic representation of relationships above, the correlation between district size and PTR is .45: low PTRs are found disproportionately in small districts. The important policy issue here, then, is how best to deal with the financial problems created in school districts by small and fiscally inefficient schools.

Thus, small districts are at present providing lower levels of services of various kinds, probably in order to maintain the fiscally inefficient small schools. This issue will be discussed subsequently, in relation to the equity issue.

Myth 2: Ineffectiveness

One of the strongest and most important relationships in education is that between family background and student achievement levels. Since the Coleman et al. Report on *Equality of Educational Opportunity* (1966) we have known that family background, and particularly family educational level, is the best single predictor of student achievement, far more important than any other single factor.

For British Columbia, the best data available suggest that between 12% and 40% of the variance in test scores (depending on subject area and grade) are accounted for by family background variables (Coleman, in press). Furthermore, within the province some districts have very much higher aggregate levels of family education than others. In particular, there is a strong and stable relationship between district size and family education level (1981: $r=.43$; 1984: $r=.41$; Coleman, in press). Thus interdistrict comparisons which do not take family education levels into account are invariably biased against small districts.

When the effects of family education levels are controlled statistically, the correlations between district size and student achievement are .05 for both 1981 and 1984, and, as before, are statistically meaningless. Similarly, the correlations between school size and student achievement are .21 and .08, and not statistically significant at the .01 level (Coleman, in press).

Evidence of a different kind is also available. A case study by Youngberg (1986) examined the relationships between achievement levels in basic education courses for two cohorts of students. The first group consisted of 96 students who completed the junior secondary grades in a group of rural junior secondary schools in a northern school district. The second consisted of a group of 96 students who attended the junior secondary grades in the urban schools of the same district during the same period. A wide variety of data were collected and analyzed, including student surveys, records of achievement, and socioeconomic data on family backgrounds. The rural students had noticeably lower family education levels and educational aspirations; for example 52.6% of the students from rural junior secondary schools completed Grade 12 graduation requirements, versus 73.9% for the urban students.

However, the rural students received significantly better grades in senior secondary school subjects: a mean GPA of 3.76 versus 3.39 (a statistically significant difference; $p < .01$). Further, the students were quite satisfied with their experiences in the rural schools. They perceived the preparation they had received for senior secondary school work to be equivalent to that of the urban students, and 70.7% of them believed that rural junior secondary programs should be maintained.

This case study provides support and some detailed explanation of the results of the province-wide statistical analysis. Small and rural junior secondary schools can provide perfectly satisfactory educational programs. To return to the provincial level, when the effects of family educational level are taken into account, small school districts are precisely as effective as large districts, in terms of student achievement.

Myth 3: Inequity

The notion that small districts do not provide the same levels of educational opportunity as larger ones is the most difficult of the myths to deal with, precisely because it is the least clearly articulated. For example, if educational opportunity is defined very broadly as cultural, social, and recreational possibilities, then it seems indisputable that small communities, in which small districts tend to be located, do offer a narrower set of possibilities. If the debate is focused on schooling, then educational opportunity can be defined as access to a good quality of basic educational programs which provide preparation for postsecondary or career possibilities. The fact that student achievement scores in basic program areas, when aggregated to district levels, are not associated with district size, seems to suggest that at least one form of educational opportunity is distributed across the province without reference to the school district of residence.

From a parental perspective this situation is probably moderately satisfactory. Again, case study data are available. Wicharuk (1986) studied current parental perceptions of a school board decision taken in 1979 to decentralize junior secondary programs from an urban center to a group of rural elementary schools. A series of open-ended interviews provided the data. A very considerable change of opinion amongst parents had taken place. With one exception, this change of opinion was favorable to the rural secondary option. More interesting were the reasons given for the positive view of the rural option. A typical comment was "C. (school) teaches students how to work and gives them better academic preparation for senior high school than do the urban schools." With regard to electives: "it would be nice to have more choice in electives, but it's more important that the students get the basics that they need for high school." The most significant factor emerging to account for the rather high level of parent satisfaction, according to Wicharuk, was the provision of a good basic program with high academic standards.

With respect to academic opportunities at the school there was almost unanimous approval and support. . . . For many who had originally opposed the secondary division, it was the factor which reversed the earlier opinion. Indeed, one of the most frequent comments made by parents was "Look at the honor roll in town. They must be doing a good job here for so many of our kids to do so well there." (p. 64)

Commonly, both district and school consolidation has been strongly resisted by parents, unconvinced by the advantages of larger units. The reverse, at least in one British Columbia school district, is not the case.

Another definition of equity focuses on service level equity. In discussions of funding in the 1970s this became the central issue (Coleman, 1972a). It has already been noted that small districts in British Columbia are probably providing lower levels of services of various kinds, in order to maintain the fiscally inefficient small schools. (Such lower levels are apparently common; see, for example, Dunne, 1977). An illustration of this problem is provided by Baldwin's (1986) description of teacher assignments in a small rural elementary/secondary school:

Out of the six FTE teachers, 1.4 were utilized at the junior secondary level. The following shows the teaching assignments of the two teachers involved:

Teacher A - English 8, English 9, English 10, Math 8, Math 9, Math 10, Science 8, Science 9, Science 10, Phys. Ed. 8, Phys. Ed. 9, Phys. Ed. 10, Foods and Nutrition 9, French 8, French 9, French 10.

Teacher B - (Principal) - Social 8, Social 9, Social 10, Typing 9/10, Drafting 8.

Although Teacher A's load includes 14 courses, this individual did not in actuality have that many courses to prepare for and teach. As will be seen later, some of these courses were collapsed by subject area in order to make the assignment more manageable. Teacher B, the Principal, also taught some elementary level programs. (Baldwin, 1986, p. 112)

Such teacher assignments are rare in large urban districts.

With regard to equity, the situation seems to be as follows. In terms of basic educational programs, there is a reasonable level of equity; from the perspective of parents, it is probable that this situation, to the extent that it is known, is or would be considered satisfactory. With regard to service levels, there has existed a substantial degree of inequity, probably associated with the fiscal difficulty districts experience in operating small schools. (Very recent data suggest that this problem has been recognized by provincial authorities; this will be the subject of a follow-up report.) Amalgamating small districts into larger ones does not resolve these fiscal difficulties, it only makes them less apparent to all except the district and school administrators who must cope with them.

Policy and Research Implications

Amalgamation as a Policy Option

The traditional solution to the problem of small districts has been district consolidation or amalgamation. In essence, there are three difficulties with district amalgamations as a policy option. The first has to do with the rationale. As has already been suggested, in British Columbia small districts are as efficient and effective as larger ones. Thus no increase in either efficiency or effectiveness could reasonably be expected to follow from amalgamations.

The second has to do with practicality from a geographical perspective: Just as small schools in certain geographical locations are inevitable, so too are small school districts. To use one of the more obvious examples, if the school district of Central Coast did not exist at present, it would be necessary to invent it, or something very like it. Similarly, if the small school at Rivers Inlet did not exist, it would have to be created.

These assertions rest on a very important assumption: So long as the government of the province remains committed to making public school education available to every child of school age in the province, and to local control of the delivery of educational services, small schools and small districts must exist given the current population distributions in small centers in British Columbia.

The third difficulty concerns governance: Small school districts have reputedly always been able to maintain a close and mutually satisfactory relationship with the communities they serve. As has already been pointed out, small communities tend to value a positive educational climate more highly than other kinds of educational benefits such as access to a wide range of electives or to extensive specialized services. Perhaps the best evidence of the general satisfaction of small communities with their small rural district is the opposition usually expressed to amalgamation proposals. In amalgamating districts out of existence, there is a strong possibility that community pride and autonomy will be badly damaged, with both educational and political repercussions. From a purely educational perspective, local community support of particular kinds is demonstrably associated with high levels of student achievement, at least in other jurisdictions. (Fullan, 1982, provides a review of this line of research.)

It is possible, even probable, that negative consequences of both political and educational types would follow from further school district amalgamations. Given the demonstrated relationship between district size and district efficiency, effectiveness, and equity, it is hard to imagine why such amalgamations might be considered. However, if small districts are to continue to exist, some attention must be paid to the problem of small schools.

The Problem of Small Schools

The relative fiscal inefficiency of small schools in British Columbia has already been discussed. Given the geographical factors which often determine the need for the small schools, a major increase in the mean school size in the province is not a realistic expectation. No doubt the clear realization that the inefficiency of small schools is closely associated with the PTR may make some better administrative decisions possible, but small schools will continue to be inefficient.

However, a consideration of the effects of small schools on their clients might help balance this picture of relative inefficiency. The view that small schools are ineffective, as well as inefficient, rests largely on analyses of secondary schools. Sher and Tompkins (1977) have shown that these have been misinterpreted, and that statistical data do not support the view that small secondary schools are less effective than large ones in the United States. Similarly, Rosenfeld (1977), in a case study of centralization in Vermont, questions the supposed better preparation of students in larger schools. He also demonstrates that occupational aspirations tend to be higher amongst students from small high schools, despite the lower levels of socioeconomic status of the students. Husen (1985), long associated with the IEA international and longitudinal comparisons of student achievement, has recently argued that "we must take steps to make schools smaller" (pp. 354).

For British Columbia, small schools seem to be as effective as larger ones. Youngberg's (1986) careful comparisons of school achievement for two cohorts of students certainly do not support the general view that rural secondary schools are ineffective. Wicharuk's (1986) analysis of parent perceptions suggests that rural parents are making careful judgments about school quality on the same basis as urban parents, that is, the quality of the basic education program of the school. On this basis, the parents she interviewed were generally satisfied with their small rural schools. Baldwin (1986) suggests that the problems of small schools are largely resource problems.

At the provincial level, small schools occur mostly in small districts, and when family background factors influencing achievement are controlled, small districts and small schools are as effective as large ones, as has already been pointed out. There is no reason to believe, on the basis of either the district level case studies reported here or the province-wide analysis, that small schools are less effective educationally than large ones with respect to the basic education programs important to parents.

It is almost certainly the case that small schools operate in different ways from large ones (Barker & Gump, 1964); it seems as likely that the advantages of small schools—personalization, community support—offset the disadvantages of limited supplies and equipment and restricted teacher specialization. Given some reconsideration of the resource allocation system, the small rural schools might in fact be demonstrably superior educational environments, worth emulating in urban settings.

The available evidence suggests, then, that small schools are educationally effective, though fiscally inefficient; that there are often compelling community and geographical reasons for maintaining them; and that they occur in small districts in British Columbia and constitute a serious financial burden for these districts. The provincial commitment to equitable educational services, delivered locally, entails an obligation to reexamine the funding formula which presently limits the availability in small districts of the resources necessary to operate small schools.

Conclusions

The general conclusion of this analysis is that small districts in British Columbia are as efficient, effective, and equitable as larger ones. They suffer from serious resource problems associated with the inevitably higher costs of operating small and remote schools. Currently these costs are not acknowledged in the provincial funding system for school districts. The strengths of small districts and small schools are not those of larger systems. Yet they do serve their communities well, in ways judged important by these communities. Given equitable access to provincial resources, these small units may indeed become models of educational quality. In public educational organizations in British Columbia, small is at present as beautiful as large; in future it may become clear that it is indeed more beautiful than large.

Applying data from a province level case study to the wider educational scene is difficult. However, the data from British Columbia suggest that the apparent inefficiencies of small school districts are due not to their size, but to the costs they incur from operating small schools. It is not district size, but mean school size, that is the problem. As long as the confusion between district level and school-level factors exists, the appropriate steps to alleviate the fiscal difficulties of the small school districts will not be taken. British Columbia is not the only province in which amalgamation is seen as the solution to the problem of the small school district, and it is likely that the confusion between district level and school level factors exists elsewhere. The nature of the fiscal difficulties of small school districts in other jurisdictions must be clarified, perhaps by replicating the analyses described here. Then attention can be focused on developing other ways of funding school districts so that those districts with small schools are treated equitably.

A more speculative suggestion, based on long-standing concerns (Coleman, 1972b) about the efficiency and effectiveness of education in large districts, is that

the whole issue of the size of administrative units requires reexamination using the new qualitative methodologies. We suspect that there is little positive justification for units which include many thousands of students, hundreds of teachers, and dozens of schools, and much that is negative about them.

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BOOK REVIEWS

THE LEADERSHIP CLASS IN SCOTTISH EDUCATION. *By Walter M. Humes.* Edinburgh: John Donald Publishers, 1986, 228 pp.

As the first major book on Scottish education for well over a decade, this study is deserving of much attention. It is not, however, a conventional study with chapters on the various levels of schooling and a historical introduction to illuminate the contemporary situation. There is little here about what actually goes on in schools. Instead the book is a sustained attack upon the administration and control of Scottish education. The bureaucracy is indicted not for corruption, but for authoritarianism, complacency, intolerance to criticism, and resistance to democratic change. The book is not entirely easy to read; it is spattered with acronyms and abbreviations so that the reader would be quite out of his depth without the key of 61 items which is provided at the beginning. Yet the book is well written and the case is argued with formidable skill.

The author begins by debunking the "received wisdom" according to which Scottish education proceeds by cooperation between central and local government with "a multiplicity of bodies and groups" involved in the educational partnership. Teachers are held to enjoy much greater freedom than their colleagues south of the border and, in general, Scottish education is seen as more democratic and egalitarian than the English system. It is also regarded as an integral part of a unique Scottish culture and an effective instrument for resisting assimilation by the English. In the author's opinion, decentralization and democracy are a myth in Scottish education and sentimental nationalism serves only to induce complacency and prevent a serious examination of underlying theoretical issues.

The author then proceeds to develop his thesis that a relatively small group of people, "who all know each other," fix the national agenda and that Scottish education must be seen within the context of this fact. As far as education is concerned, the leadership class comprises senior civil servants in the Scottish Education Department (SED), members of the inspectorate, local Directors of Education, and the leading officials in various educational bodies. It would be wrong, cautions Dr. Humes, to suggest that bureaucrats are all powerful and completely isolated from outside pressures, but increasingly, in all the western countries, the politicians are finding it difficult to constrain the officialdom which ostensibly they control.

The various sectors of the leadership class are examined in considerable detail with the SED receiving particular attention. In practice, SED officials have great freedom of action and they proceed (as bureaucrats usually do) not by any consistent principle but rather by reacting to pressures from interested parties both

within education and without. Reforms may indeed come, as they have in recent years, but inevitably the most successful pressure groups are those which know the system rather than those with the best case. Also, the judgment of officials is inevitably influenced by their own privileged social origin and the fact that they constitute a powerful interest group themselves. The author is not impressed by SED performance, and he thinks the situation is made worse by the poor quality of regional councilors in Scotland. Chosen for their party loyalty rather than their ability, they are quite unable to defend local interests against the centralizing tendencies of Scottish government. Moreover, both they and the Directors of Education have a conservative interest in that greater grassroots participation in decision-making would diminish their power.

The Scottish inspectorate is also subjected to searching and unflattering enquiry. According to the "received wisdom," the inspectorate has done more than any other single body to exercise a beneficial and creative influence on Scottish education. Undoubtedly, the 69 inspectors are a powerful force, for they can influence the promotion of classroom teachers, and, in addition to their reports and other publications, they serve between them on nearly 400 bodies of one sort or another. In the author's view, however, the inspectors, although often aggressive towards teachers, are unduly acquiescent toward government policy because they do not wish to jeopardize their chances of promotion. Their reports are "relentlessly bland" and their publications on specific topics are of limited use because they are often evaluating policies which they themselves helped to introduce. The inspectors constitute a very prestigious segment of the leadership class and are, therefore, not agents of progressive change.

Another highly visible body in Scottish education is the Consultative Committee on the Curriculum (CCC) which was established with high hopes in 1965 and reconstituted in 1976. There is a full-time secretariat headed by a member of the inspectorate, specially seconded for the purpose, and all appointments to the CCC are made by the Secretary of State on the recommendation of various interested parties. Our author is predictably skeptical of such a structure, especially as acceptable service on the CCC is seen as a stepping stone to other appointments in the gift of the Secretary of State. Some critics, he declares, see the Committee as "a front organization . . . to provide a cloak of respectability for SED-imposed directives." Certainly no serious disagreements among CCC members are aired in public, and the desire for consensus produces "a bland elision of many substantive issues." The CCC is viewed as a broken reed and little good can be expected from it.

The author's analysis is perhaps at its deadliest in his discussion of "the false god of professionalism" among teachers. Several teachers' associations exist in Scotland, varying in size, clientele, and militancy. The largest is the Education Institute of Scotland (EIS), committed to the advancement both of "sound learning" and of the interests of teachers. However in practice these two aims are not always compatible. Rank and file members of all unions are mainly concerned about salaries and conditions of work and, therefore, the purely educational policies of the union are left to the leaders and the zealots who serve on union committees. These people, though usually on the left politically, are easily assimilated by the leadership class. As to the classroom teachers, their anxiety for promotion to senior teaching posts or to administrative appointments constrains them from radical action and encourages a false professionalism which is loyal to the status quo. The author is also skeptical of what is ostensibly the great progressive innovation of Scottish education, namely, the General Teaching Council (GTC) which purports

to be a self-regulating professional body like that existing in other professions. The Council consists of 49 members and 30 of these are directly elected by teachers. There was great public interest when the Council was first established in 1965, but, according to Dr. Humes, this interest has declined sharply because of the Council's tendency to react but not to initiate, its reluctance to act against bad teachers, and its domination by College of Education principals. Also, the elected members seem to owe their allegiance to the political party or union which secured their election rather than to the Council or the education service as a whole. This strengthens the hand of the SED in dealing with the Council, and altogether the Council provides no threat to the power of the establishment.

The book's final salvoes are fired at the value and integrity of educational research. The government pretends to be interested in promoting independent research but in fact it is only interested in "limited answers to limited questions." There is little encouragement given to researchers who wish to address the historical and philosophical questions which might open up radical lines of thought. Dr. Humes is critical of the academic community for compromising its independence in order to obtain funding and so advance individual careers. Worthwhile research, he remarks, "needs to be courageous" and the first requirement is to eschew government funding.

In drawing his threads together, the author entitles his concluding chapter "From Demolition to Reconstruction," but there is only a very bare indication of the "reconstruction" which the author would like to see. He would recommend fixed term contracts for senior bureaucrats, reform of the promotion system in schools, improved mechanisms for public accountability, and the end of monoteknic institutions for training teachers. Hopefully, such changes would "reassert the privacy of the contract between teachers and learners—and offer scope of the kind of ability and imagination that are at present discouraged." But, beyond this, the author resists the temptation to elaborate on possible reforms. In his view, it would be premature to do so until the nature of the present evil is understood by the public. It is this understanding which he seeks to promote in his book. Dr. Humes emphasizes that he is not suggesting a deliberate conspiracy on the part of the leadership class. On the contrary, they are not fully conscious of the processes at work and "happily succumb" to the conventions to which they have grown accustomed. Yet their psychological evasions and the "Pavlovian reinforcement" of the patronage system at all levels produce a situation which serves neither the pupils nor the community at large. The ills of Scottish education, of course, cannot be divorced from those of Scottish society as a whole, but while Humes acknowledges this, he does not elaborate. He does not attribute the problems in any significant degree to the English connection, nor does he anticipate any great benefit from devolution in itself, should this be achieved.

Some readers will doubtless express some puzzlement that such problems can exist in a country like Scotland which is dominated politically for the most part by Labour, the self-proclaimed party of the common man. Certainly one must wonder whether Scottish educational administration is entirely as it is painted here. One must wonder whether Dr. Humes would find anything much to his liking if he turned his attention south of the border, or indeed to any country in the western world. Is educational democracy really such a sham? Need one necessarily be skeptical of "limited answers to limited questions" in educational research? One must wonder, too, whether true democracy and real local participation, if they could be achieved in education, would in fact produce all the reforms which Dr. Humes

would doubtless hope to see. For *Demos* is a fairly conservative animal and often settles for the system which he knows. It may be that radical reform if such is desired is more likely to come by decree than by participation. However, this is a vigorous and thought-provoking book which breaks new ground, and its relevance is certainly not limited to Scotland. It will delight educational radicals and should be compulsory reading for administrators the world over.

D. Ross Pugh
Department of Educational Foundations
University of Alberta

LEARNING AND DEVELOPMENT: A GLOBAL PERSPECTIVE. *By Alan Thomas and Edward W. Ploman.* Toronto, ON: Ontario Institute for Studies in Education, 1986, 222 pp.

Based on the proposition that the term "learning" represents a "more fundamental intellectual discipline" than education, building on the recent use of the term "global learning" by the United Nations University and recognizing the increased interest in learning as a prime factor in national development, the Symposium on Global Learning was arranged in the spring of 1985 at the Ontario Institute for Studies in Education, Toronto. It was sponsored jointly by that institution, by the UN University, and by the Canadian International Development Agency. Forty-two individuals from 21 countries were invited to consider the concept of learning as distinct from education with the expectation that such an orientation would avoid some of the stereotypes, conventions, and clichés associated with traditional education. Such an orientation was also intended to facilitate a broad exploration of learning from a wide variety of disciplines, including psychology, anthropology, computer technology, neurology, biology, and communications; all of which fields of study and activity are concerned with the ways in which knowledge is transmitted, behavior is caused, and individual and social development is enhanced.

To add a note of immediacy and reality to the discussions on learning, the symposium focused on the role of learning (or education) in international and development activities. Indeed, one of the key concepts to emerge from this meeting was the idea of societal learning, that is, learning which is directed at groups, societies, nations, and eventually the entire globe with the hope that as a human race we may learn behavior, values, and skills more appropriate to the imperatives which, though clearly before us, are unfortunately not always well represented in our educational policies and planning.

This publication collects the major presentations of the Global Symposium on Learning and offers new percepts and revised concepts in the related fields of learning, education, communications, and development. It does not pretend to be a definitive statement on societal and global learning and is best seen as an important addition to the growing literature in this field, building particularly on the 1972 UNESCO report "Learning to Be" (the Faure Report) and its companion volume "Education on the Move" (1975) as well as the sixth report to the Club of Rome "No Limits to Learning" (1979). These three publications as well as this

recent one emphasize the following points in what they hope is a new and stimulating look at learning:

1. Learning needs to be seen as something which continues before, beyond, and around formal education and is something which occurs in many formal and nonformal educational environments.
2. Learning must be seen by the learner as something which is practical, useful, and relevant to contemporary concerns and problems.
3. Learning must utilize and deal with the impact of technology on society and on learning itself.
4. Careful attention must be given to traditional and indigenous cultures if learning, particularly in the developmental context, is to take root in the culture for which it is intended.
5. Learning opportunities must be planned and arranged on a lifelong basis so that people at all stages of their life will have an opportunity to learn.
6. Learning programs need to reintroduce into the learning process the long neglected themes of morality and ethics, which themes were originally the basis of all education and are now almost extinct in educational programming.
7. Greater use must be made of the arts, of mankind's creative instincts, of the universal needs for meaning and purpose, all of which are mediated largely by culture.

Fortunately, there are some practical illustrations of the kind of learning toward which we are being urged. There is, for example, an excellent summary of the strategies which are part of the Sarvodaya movement in Sri Lanka. Much has been written about this remarkable movement but this account is the most coherent and comprehensive to date. Equally interesting is the description of the ambitious Venezuelan experience described by Machado who was minister of State for the Development of Human Intelligence in that country between 1979 and 1984. This experiment is still underway and has been described as the first time "intelligence and its development were given a political dimension." Also included is an account of learning among the people of the Dinka culture in the Sudan, presented as a living illustration of an educational program the objects of which are to improve human relationships, further cultural orientation and enhance personal dignity. There is a detailed account of contemporary adult education programs in Shanghai with a description about how such large scale programs can be implemented.

The introductory and overview chapters are well worth reading and provide a good orientation to the use of some new terms and concepts. For example, the term "global" as used in this publication and as applied to learning has a twofold meaning. It refers first, to an inclusive process which embraces all of the elements involved in integrated cognition and in preparing the learner with life skills and learning habits which will permit him to cope with a range of contradictions and large quantities of information. Equally important, global also refers to a better understanding of the condition of the world as seen in its cultural, racial, political, and social diversity. Global, therefore, is seen as a comprehensive and integrated learning strategy as well as an approach to understanding the needs of the age in which we live. Not only is the *process* to be global, its *content* must be global.

We must learn how to manage global, complex systems while respecting the autonomy of the processes and elements within these systems. We need to develop the ability of adjusting to and coping with new technology, new demographic patterns, new modes of

production, new stages of physical consciousness, new images of the world, and ourselves. And, whether we wish it or not, these images must include humanity as a planetary phenomenon, all of us as stewards in this planet. We must learn how to accept planetary obligations to present as well as to future generations. (p. xxi)

It is too early for unanimity about the kind of learning appropriate for this age. Nor do we expect a unified curriculum to be developed. But perhaps it is reasonable to expect a tolerance for different learning approaches, a recognition of different modes of knowing, a willingness to innovate and, most important, a need for approaches to learning which are both global in process and in content. This book adds much to the discussion and to our understanding. It will be welcomed by anyone interested in new approaches to learning, in the role of learning in national and international development, in the role of culture and tradition in learning, and in the importance of new technology in understanding ourselves and the world around us.

Glen A. Eyford
Centre for International Education and Development
University of Alberta

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